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Why the Smart Home Matters for Energy Providers

IREC
INTERSTATE RENEWABLE ENERGY COUNCIL
Independent leadership. Trusted clean energy expertise.

Why the Smart Home Matters for Energy Providers

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ONE

Energy Costs and Consumer Behavior

TWO

Industry/Consumer Relationship

THREE

Smart Home Enabling Programs/Efficiencies

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Daniel Holcomb

Senior Analyst, Smart Home Research

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Data Centers and AI Energy Consumption

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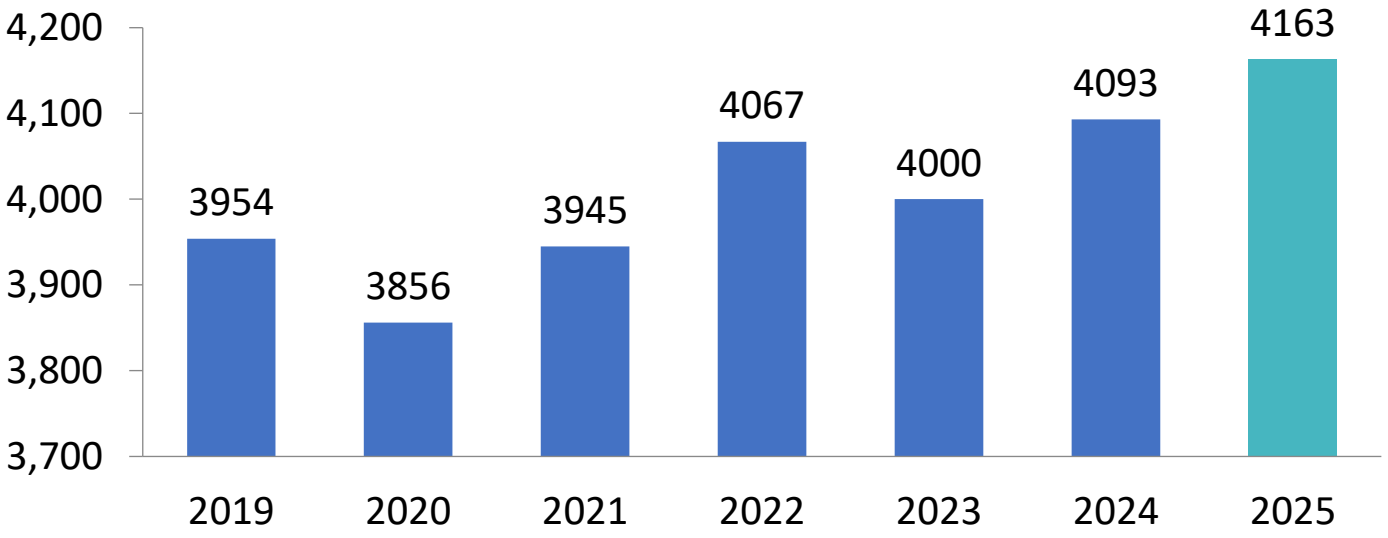
US Electricity Consumption (1B kWh)



SOURCE: eia Independent Statistics and Analysis ™ U.S. Energy Information Administration

Top Demand Drivers

- Data centers for AI, cryptocurrency
- Electrification of household appliances & HVAC
- Transportation electrification, residential & commercial

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Cost or Opportunity?

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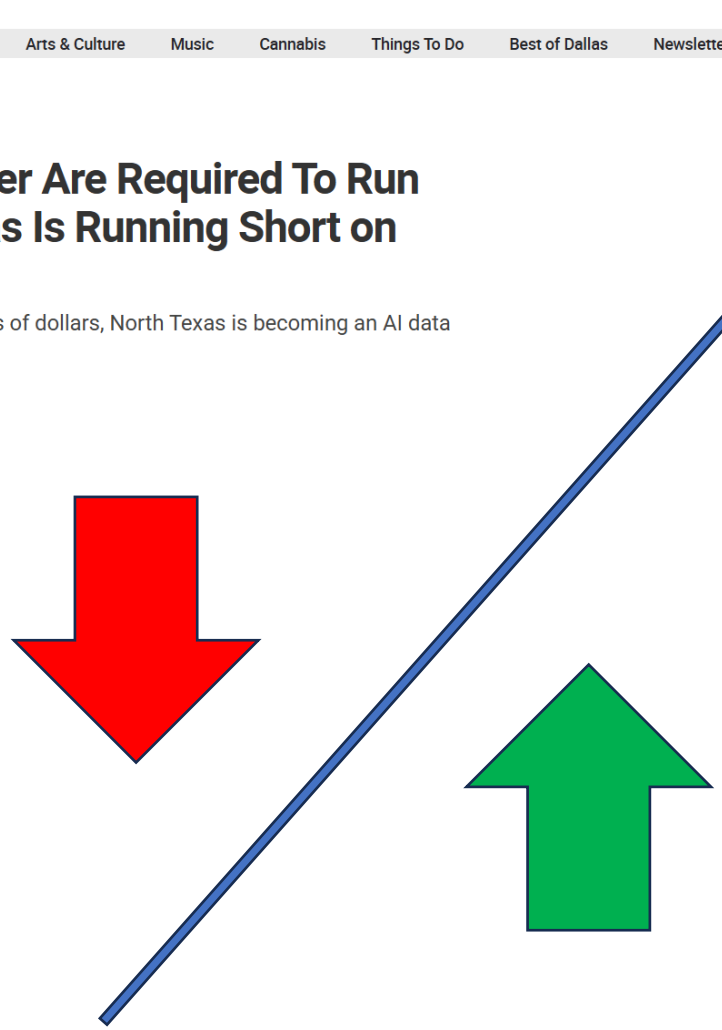
ENVIRONMENT | TECHNOLOGY

Electricity and Water Are Required To Run Data Centers. Texas Is Running Short on Both.

Backed by Donald Trump and billions of dollars, North Texas is becoming an AI data center hub.

By Emma Ruby | February 19, 2025



UTILITY DIVE Deep Dive Opinion Library Events Press Releases

Generation T&D Grid Reliability Electrification Load Management Renewables Storage

OPINION

How AI data centers can support grid reliability in Texas and across the US

An Enhanced Reliability Interconnection framework would prioritize connections to the grid for large loads that improve reliability through flexibility and behind-the-meter generation.

Published April 22, 2025

By Gideon Powell and Josh T. Smith

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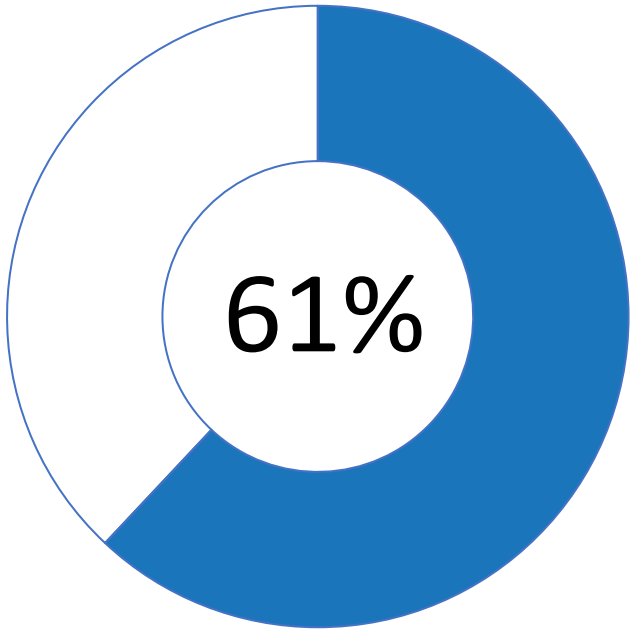
Consumers Find Energy Expensive and Rely on Mindful Actions



Most households now say their electricity costs are too high

Top 3 "Mindful Actions" To Save Energy

Adjusted Thermostats

Asked the family to turn out lights in unused rooms

Turned off or unplugged electronics when not in use

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Macro-Economic and Policy Outlook

Federal interest rates

- Cuts-spur consumer activity, homebuying, etc.
- Delayed cuts-homebuying, tech buying slump

Tariffs

- Import costs of critical tech
- Downstream effects-cost of goods

Inflation Reduction Act Uncertainty

- Left in place-soften the blow of tariffs
- Repeal or cuts-less consumer activity

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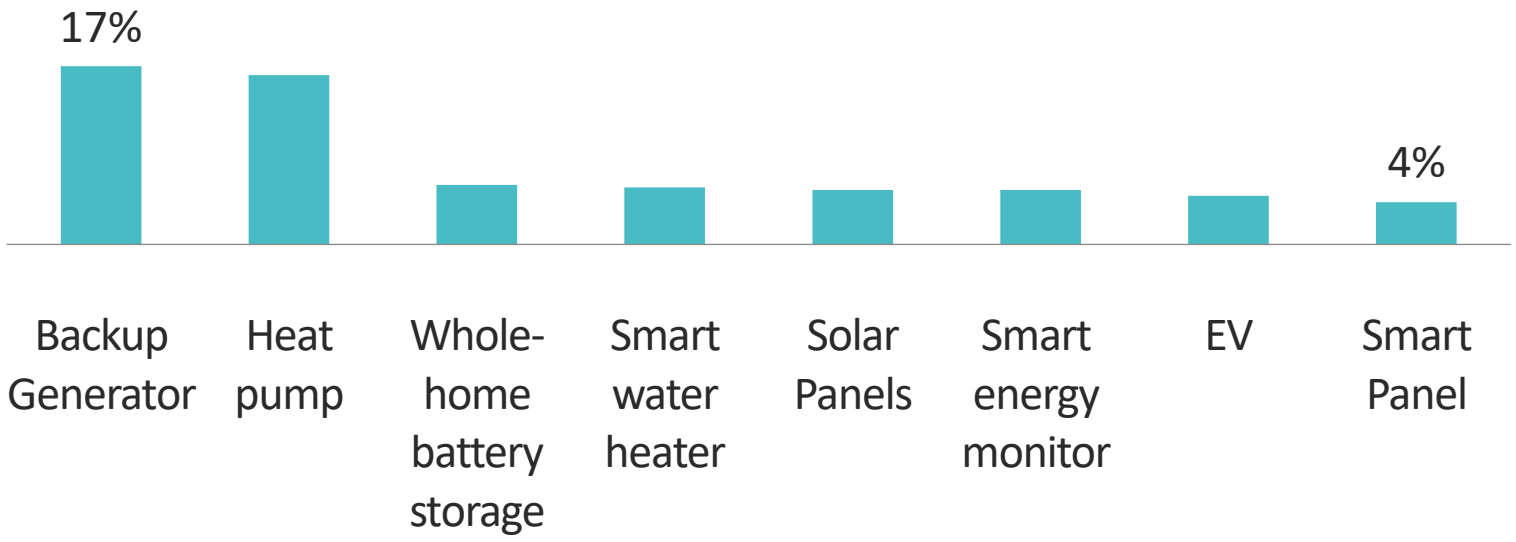
Energy Equipment Adoption Is Low Today

Major Energy Equipment is stalled in adoption. Consumer are more likely to start their energy management journey with:

- Smart Thermostats
- Smart Lights
- Smart Plugs
- Smart switches/dimmers
- Energy monitors
- Heat Pumps/HVACs

Ownership of Major Home Energy Equipment



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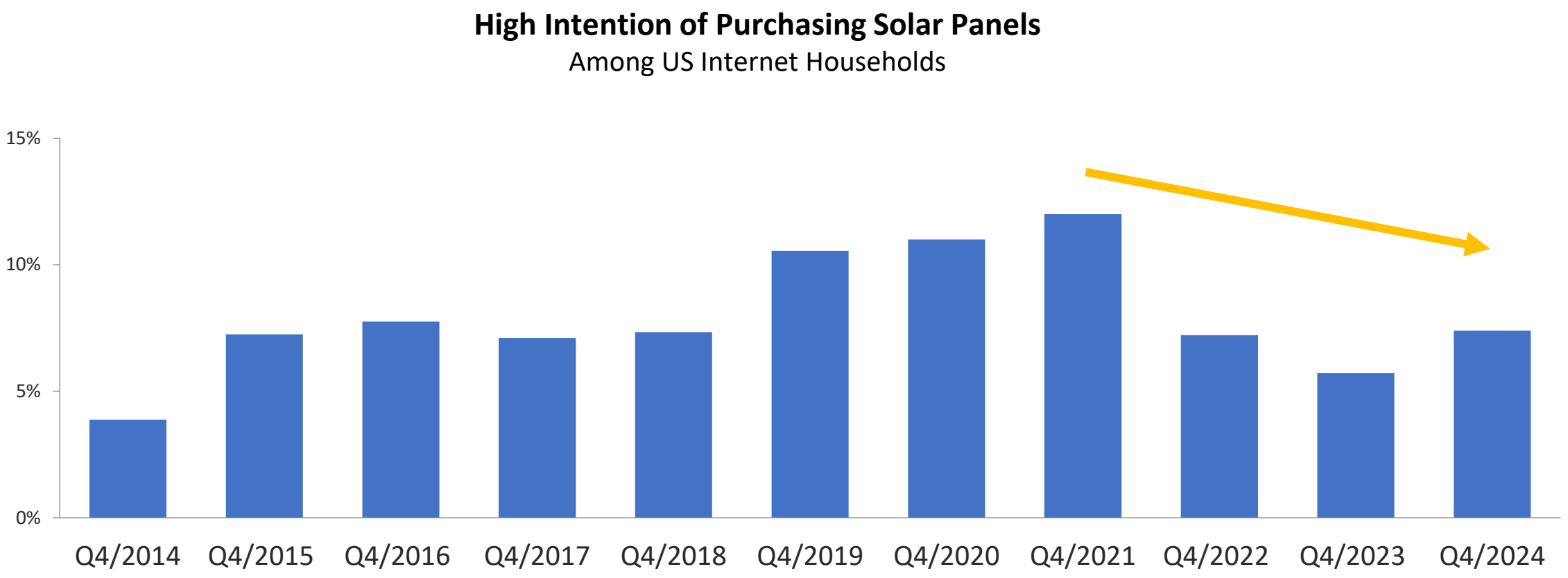
Challenges Ahead: Solar Faltering



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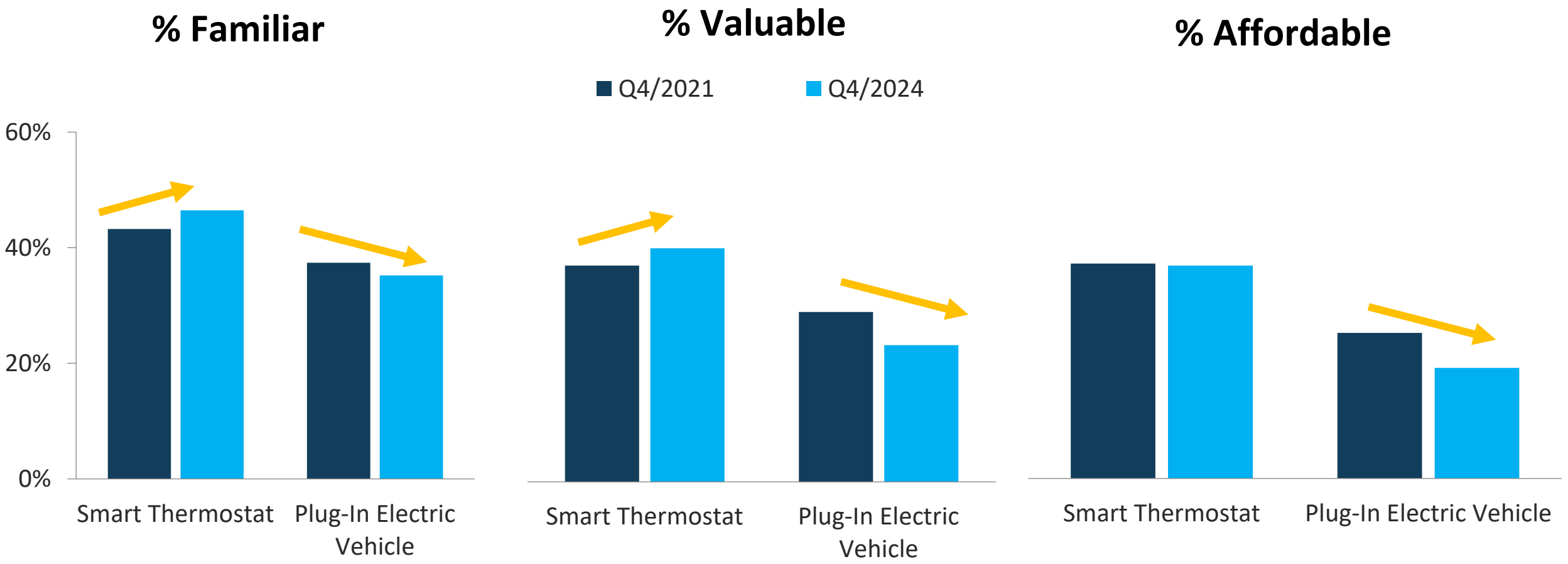
Challenges Ahead: EV Also Faltering



% of US Internet Households Rating 5-7 on a 7-pt scale.

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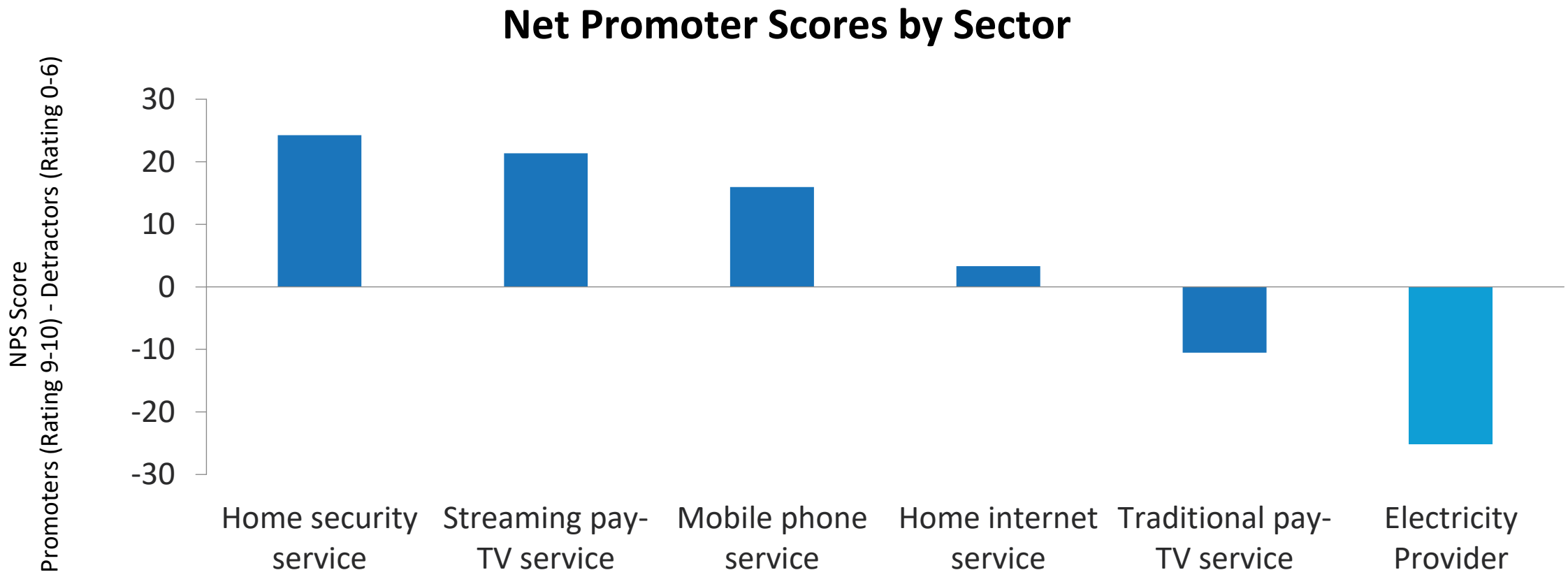
Consumer Brands Can Lead Home Energy Play



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Electricity Providers are #4 – Key is Partnerships

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Smart Thermostat Channel Rankings (2020 - 2024)

From what type of company did you acquire your smart home device?

Year	#1 Source	#2 Source	#3 Source	#4 Source	#5 Source
2024	National or local retailer	Heating/cooling contractor	Online-only retailer	**Electricity provider**	Product manufacturer website or store
2023	National or local retailer	Online-only retailer	Heating/cooling contractor	Product manufacturer website or store	**Electricity provider**
2022	Online-only retailer	National or local retailer	Heating/cooling contractor	**Electricity provider**	Product manufacturer website or store
2021	National or local retailer	Online-only retailer	Heating/cooling contractor	**Electricity provider**	Purchased directly from manufacturer
2020	Online-only retailer	National or local retailer	Heating/cooling contractor	Independent service contractor	Broadband service provider

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Information Is Key-What Consumers Need

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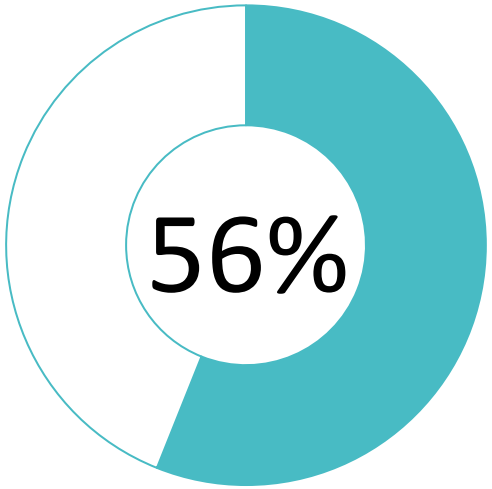
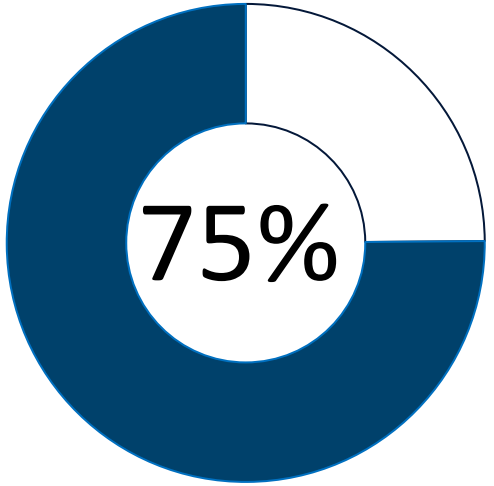
Receive Electricity Consumption Breakdown from Energy Provider



What Consumers Get

Viewing Energy Breakdown Only 1 time/month



What Consumers Want

- Alerts for faulty wiring or fire hazards
- Alerts of potential maintenance issues
- Disaggregated energy insights
- Energy bill tracking on demand

55%

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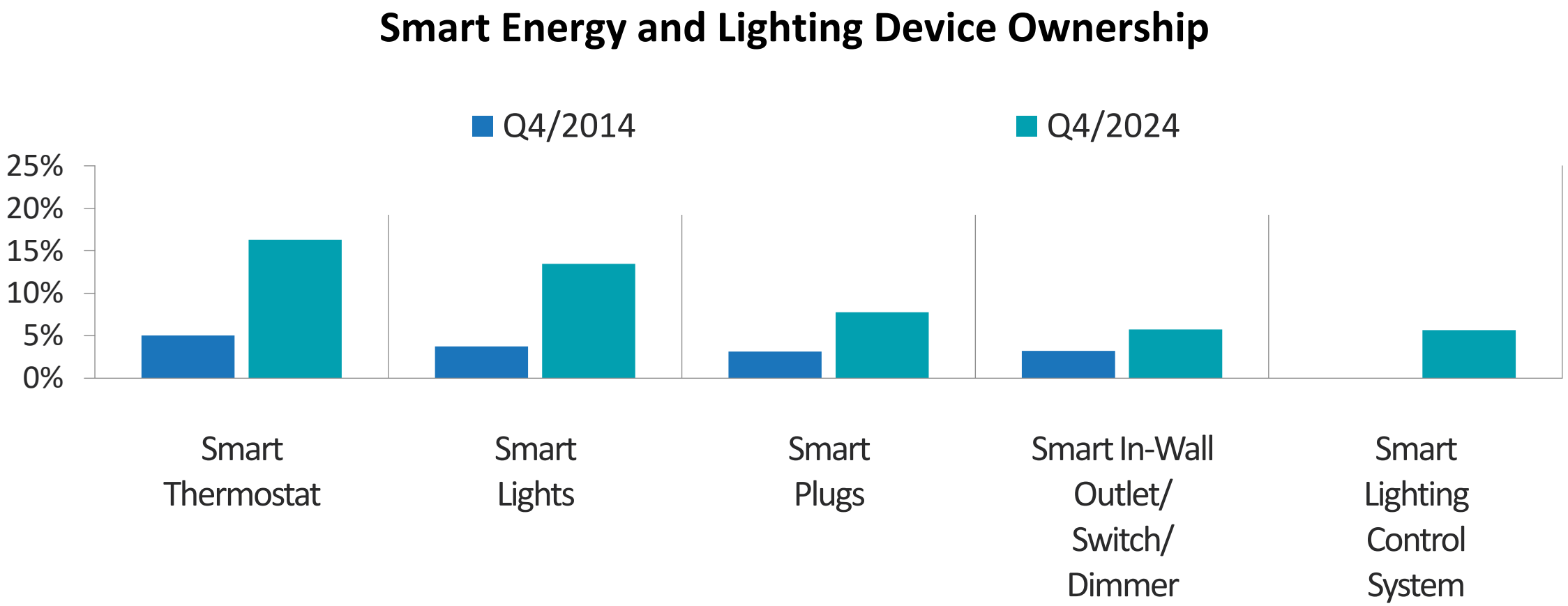
Smart Energy Device Adoption Long Term



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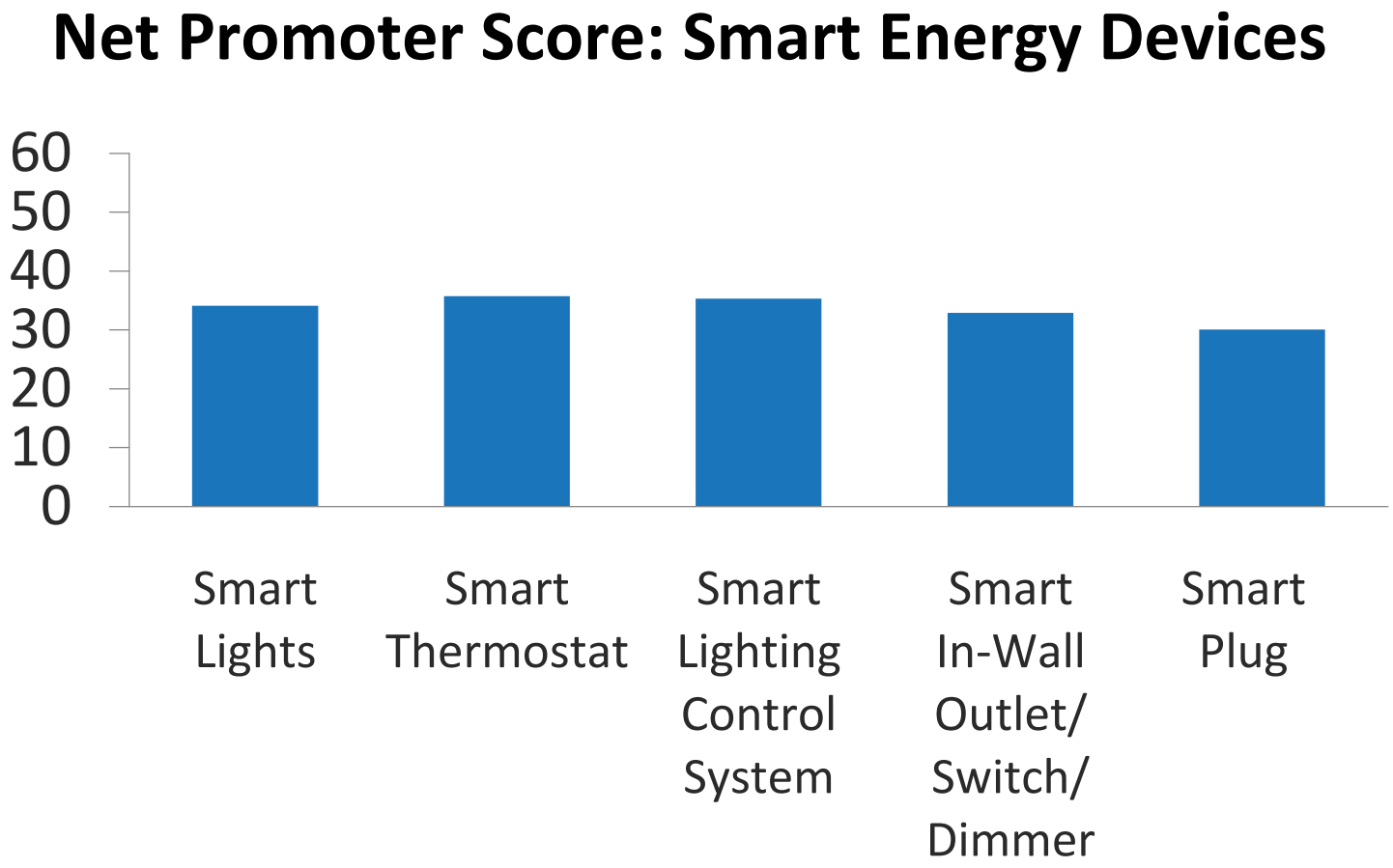
Smart Energy Devices-High NPS Score

Why NPS?

NPS is a measure of a consumers' likelihood of recommending a product, service or brand to others, thus testing satisfaction and loyalty.

Video doorbells are the highest-rating smart home device with an NPS of 43 and smart speakers score the lowest, with an NPS of 18.



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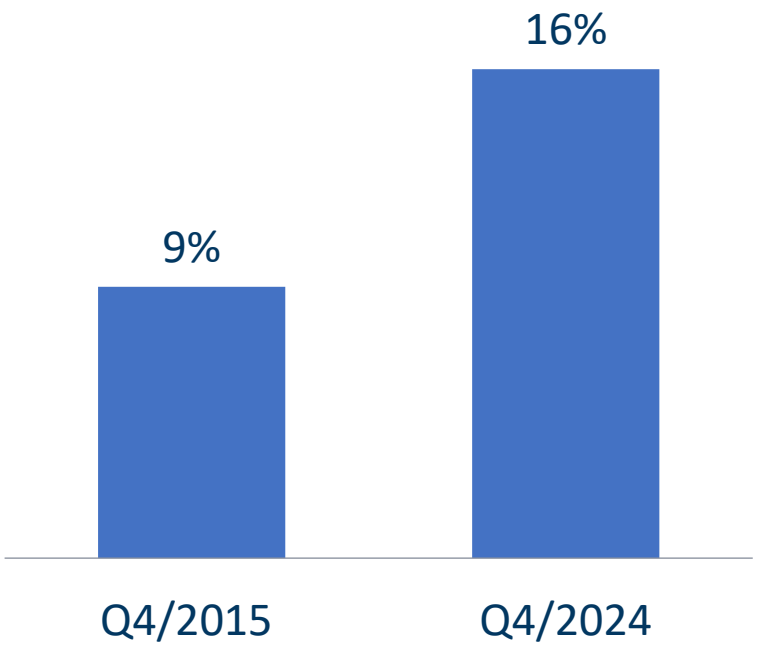
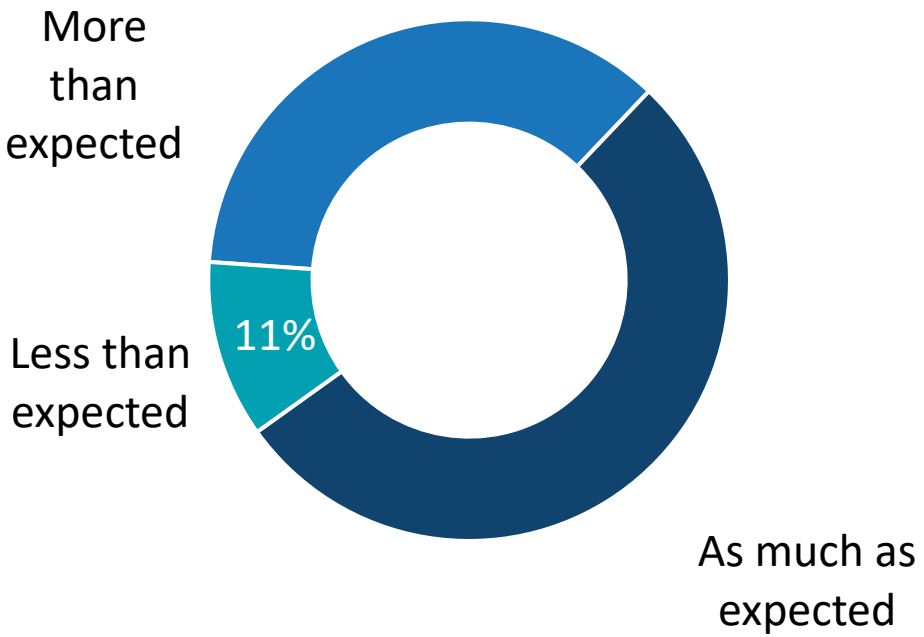
Thermostats Are Key for Savings

Smart Thermostat Ownership



Most Smart Thermostat Owners Give Favorable Reviews of Their Savings



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Incentives Drive Sign-ups

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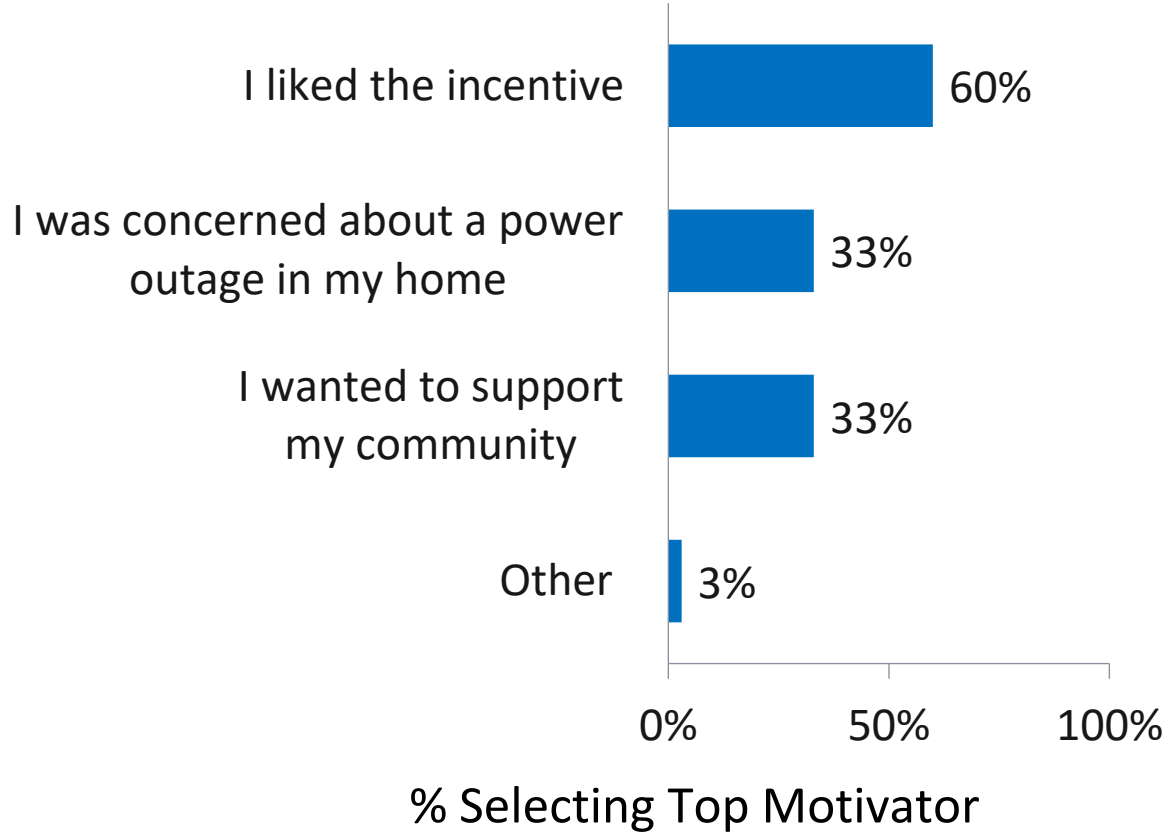
PEAK PERKS BY FLAIR

PeakPayback

Connect & Conserve Demand Response Program

empower SmartRewards

Top Motivation to Participant in Demand Response Program



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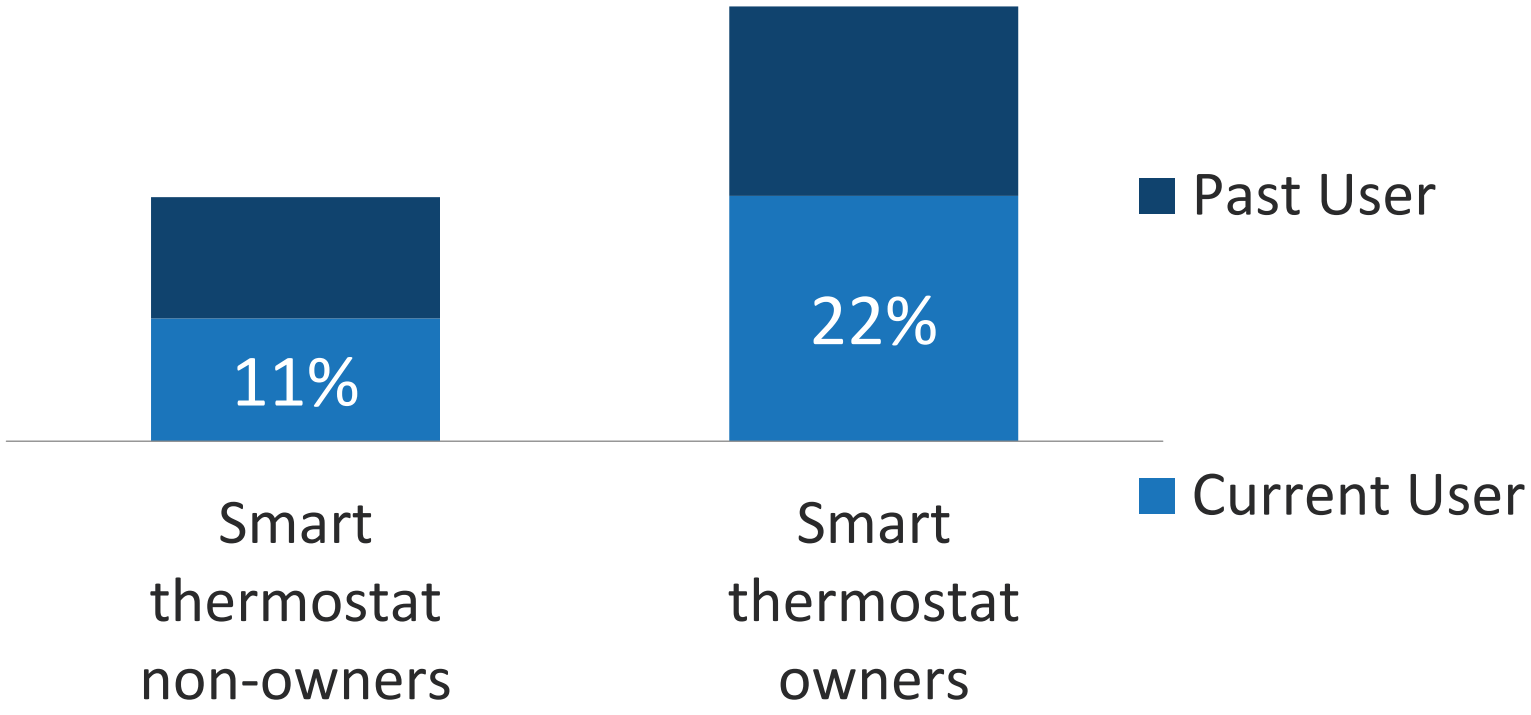
Smart Thermostat to Energy Program Pipeline

Demand Response Program Use Details



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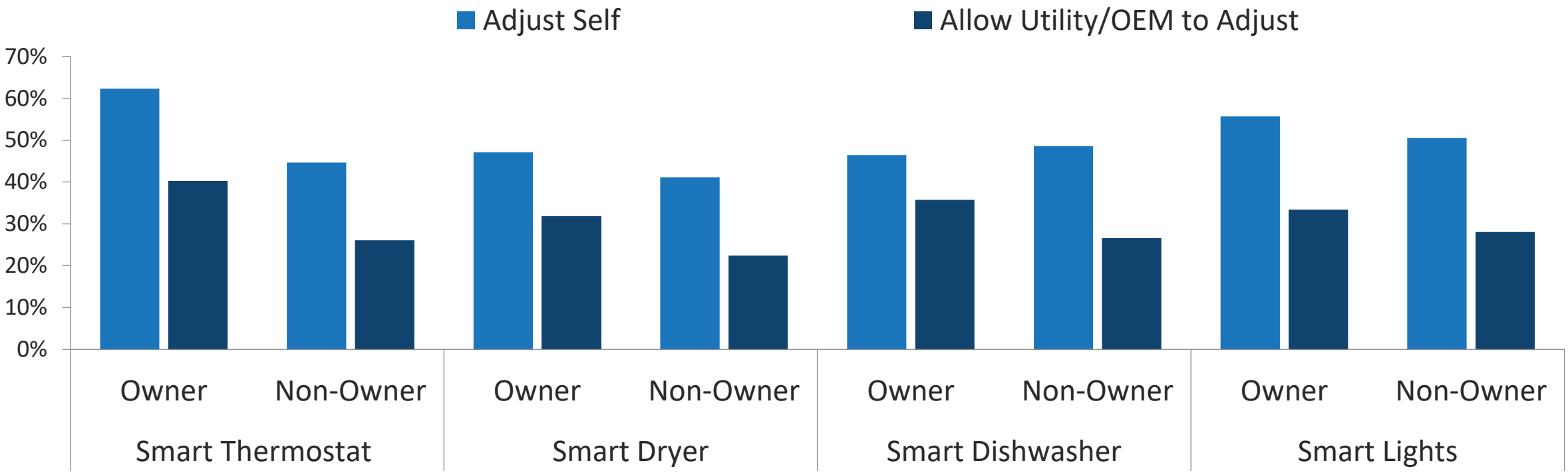
Smart Home Owners Are Primed for DR

Willingness to Adjust Products During Peaks, Among Smart Product Owners



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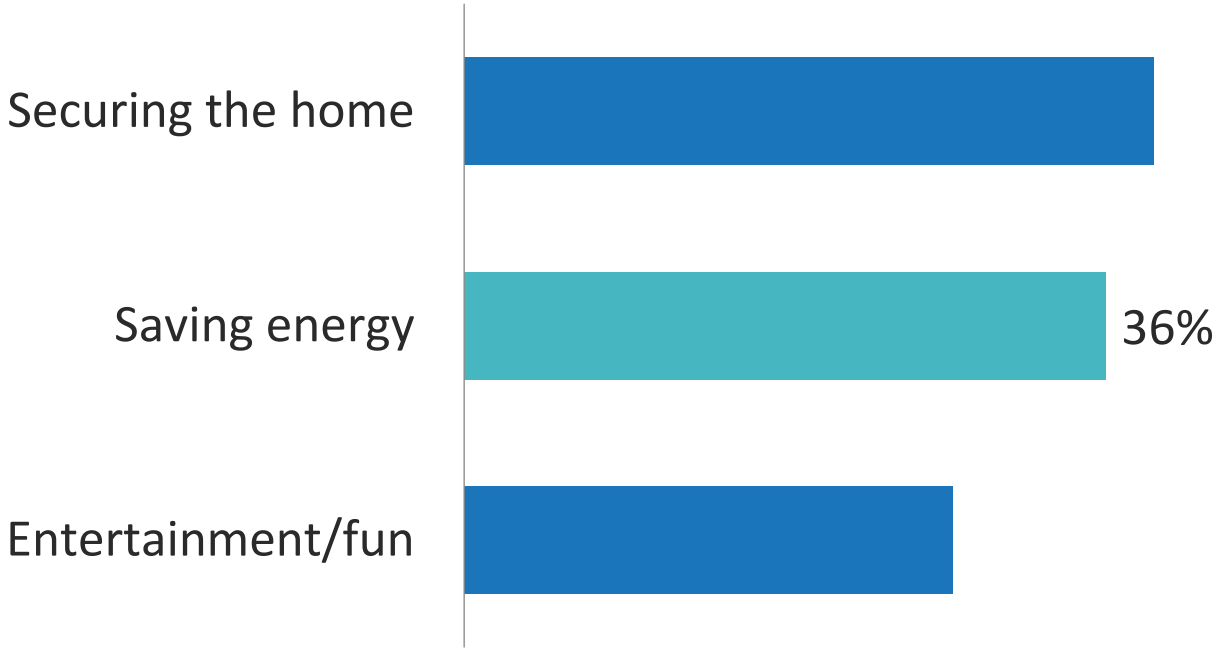
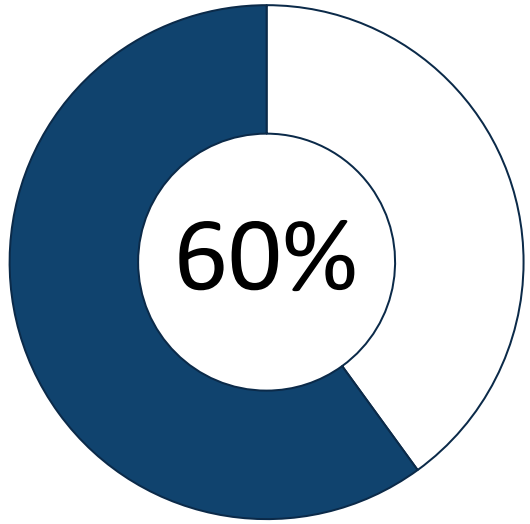
Data For Automations

Purpose of Smart Home Device Integration



Willingness to Share Energy Usage Data Between Devices- Smart Home Owners



Caveat: could timed automations exact a net energy cost?

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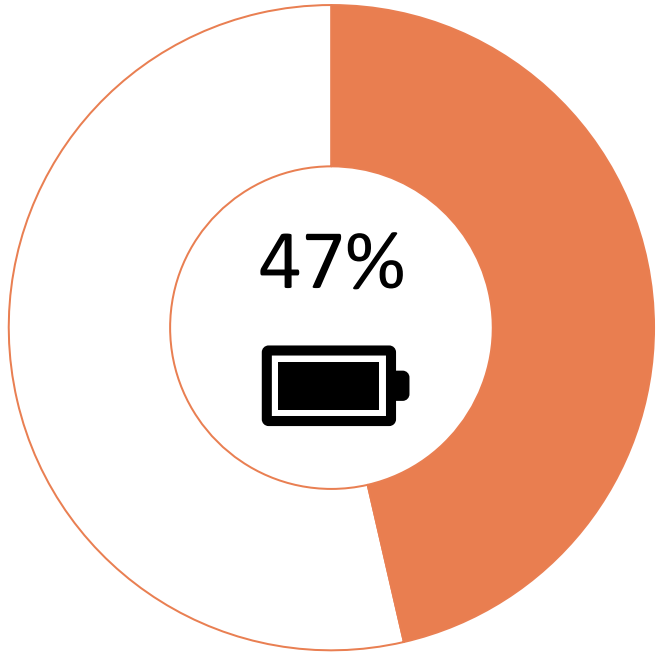
Scaling Energy Equipment-Batteries Next?

Whole Home Battery

Uninterruptible Power Supply

Portable Power Supply

Interest in Electricity Storage Solutions



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Batteries-Many Use Cases, Wide Appeal

Widest Overall Appeal

59%

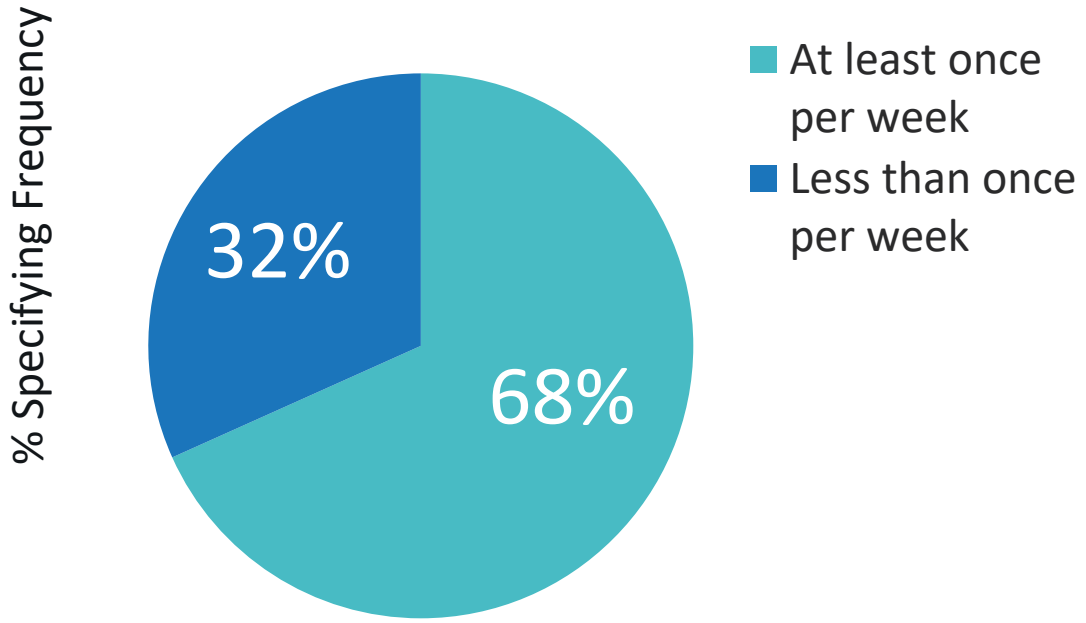
Whole-home backup during power outages

Least Overall Appeal

49%

Portable battery to power electronics on the go

Frequency of Using Home Battery to Power Home (Solar and Battery Owners)



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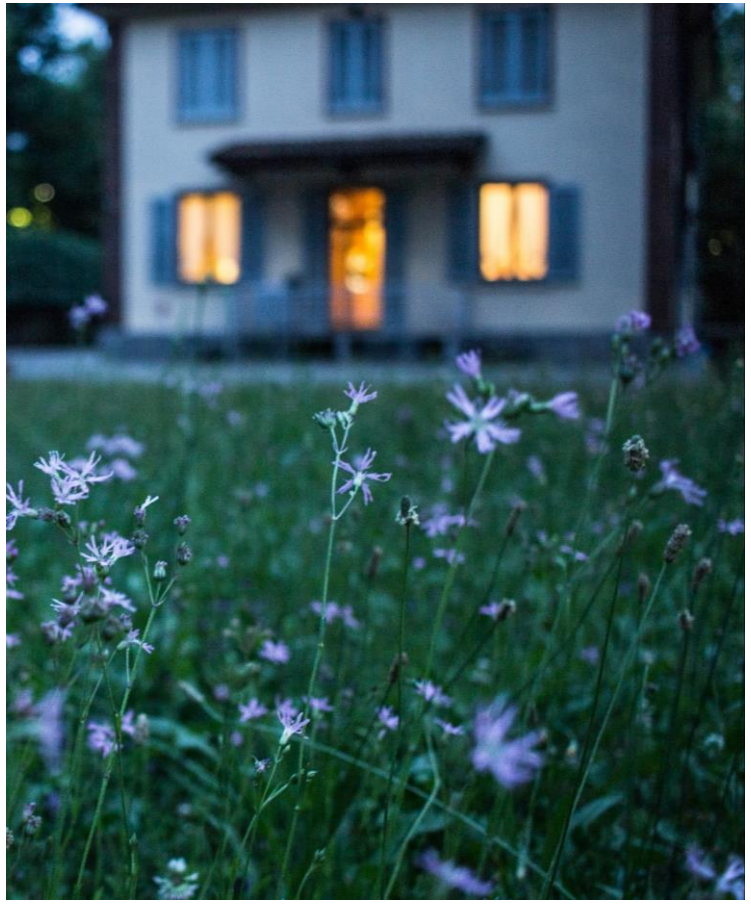
The Smart Home and Energy Story



- Energy costs are forcing consumers to take action
- Energy equipment adoption is low today-start small
- Energy providers have low NPS scores and a bad rep
- Partnerships between utilities, smart home, and home energy management companies are vital
- Smart home devices are a great entry point, scale up from there
- Energy programs need to be marketed and incentivized

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