

ORACLE

Opower Peak Management

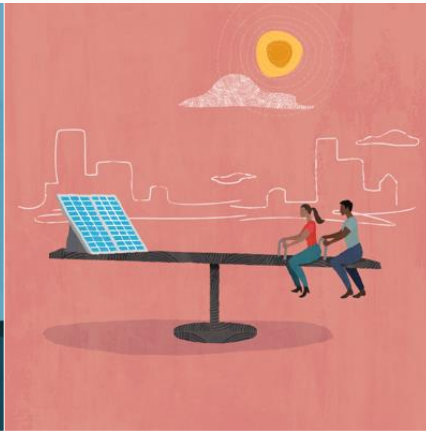
Putting the power of the consumer to work to reduce peak demand

Mary Sprayregen, Global Head, Regulatory Affairs

Opower

May 2024

Opower solutions place the consumer at the center of the energy transition



Energy Efficiency

Reduce emissions faster with energy efficiency innovation

Demand Flexibility

Build system resiliency & avoid dirty peaks with demand flexibility

Electrification

Speed up the time to value of beneficial electrification

Equity + Affordability

Improve equity and affordability in the communities you serve

Digital Engagement

Use AI and behavioral science to connect with customers digitally

Tech & Opower X

Personalize your entire customer experience & influence more action

Our DSM solutions consistently drive energy and peak savings, high customer satisfaction, and program uplift for our utility partners



119%

Savings compared to Program Goals

5-8%

Increased Customer Satisfaction

32%

Uplift in Program & Product Adoption

73%

Customers Motivated to Take Action

2-3%

Average Peak Savings

36

TWh
Of energy saved



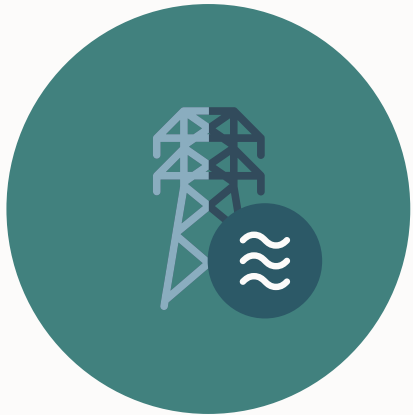
ORACLE

Demand Flexibility



Demand Flexibility

Demand flexibility is the idea that utilities can drive grid and customer benefits by adapting and shifting customer demand so that it aligns with when energy is clean, cheap, or abundant



Deliver load-following "passive" peak reduction



Shifting load from high demand peak intensive times to lower demand non-peak times



Reducing demand during summer and winter system critical peak times



Directly curtailing specific resources when needed to reduce or shape demand



80% of DER capacity will be behind the meter by 2035... But...

8%

Fewer than 8% of US households choose to enroll in residential DR



Opower's Demand Side Management Platform



Device Control

Curtail and control customer devices

Peak Management

Engage all your customers for cost-effective critical peak reduction

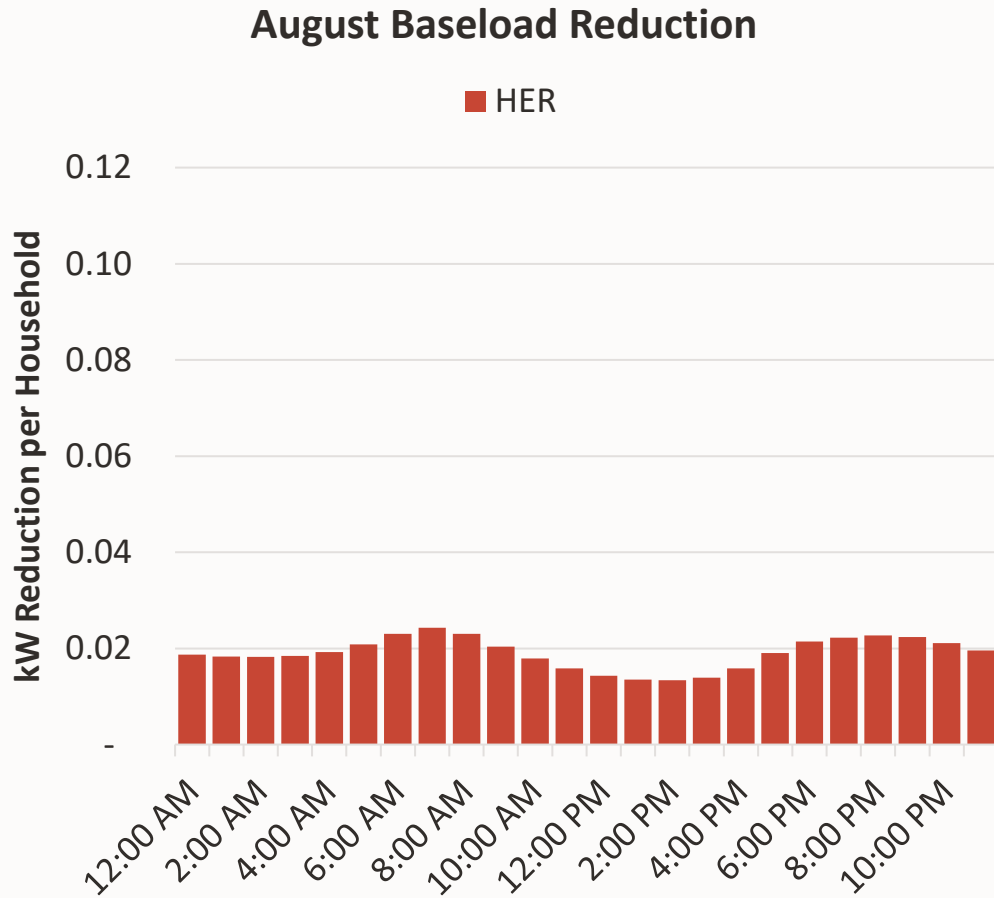
Behavioral Load Shaping

Shape and shift your daily peak load by engaging your TOU customers

Behavioral Energy Efficiency

Home Energy Reports designed to reduce demand, engage customers, drive program, rate, and DER adoption

Peak Day Baseload Stack Step 1a: Home Energy Reports (aka HERs)



*Reflects savings post ramp-up

UtilityCo
123 Energy Way, Austin, TX 12345-6789

0014837 6023-C104 -P14851-70005

SARAH CLARK
1000 SUNSHINE BLVD
APT. B
AUSTIN, TX 12345-6789

*****AUTO**S-DIGIT 12345

Home Energy Report: Summer Edition
May 20, 2021
Account #1234567890
1000 Sunshine Blvd, Apt. B
Austin, TX 12345-6789

**Feel the warmth in the air?
Time to prepare!**

Cooling has a big impact on summer energy bills

39% of your total energy use went towards **cooling*** last summer

*Can include window units, central AC, and fans

LAST SUMMER

✓ Nice work! You used **less** on cooling than homes in the Efficiency Zone.

393 kWh

You

450 kWh

Homes in the Efficiency Zone

Homes in the Efficiency Zone are the 20% of similar homes that used the least amount of energy from Jun 6-Aug 30, 2020.

THIS SUMMER

When you're out for a few hours, turn up your thermostat for easy energy savings.

When out, raise it by

5-8°F

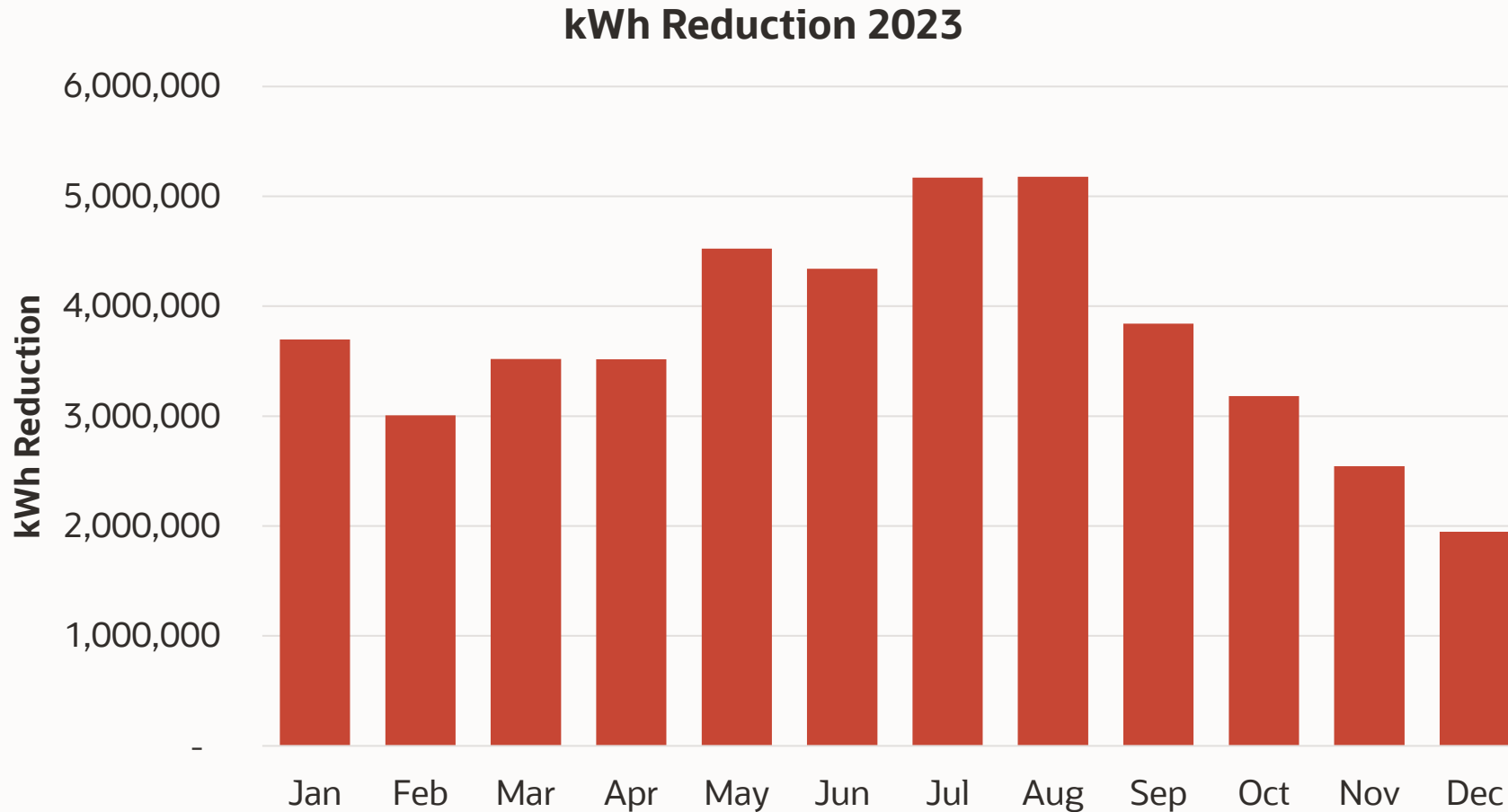
Recommended by the US Dept. of Energy

Make it easier: Installing a smart thermostat lets you switch between home and away temperature settings using your smartphone. If you're away at regular times during the week, you can set your thermostat to adjust automatically based on your schedule.

Ready to save more this summer? Turn over for ways to stay cool while you save. [➔](#)



Home Energy Report kWh Reduction for a Typical HER Program (Southwestern Utility)

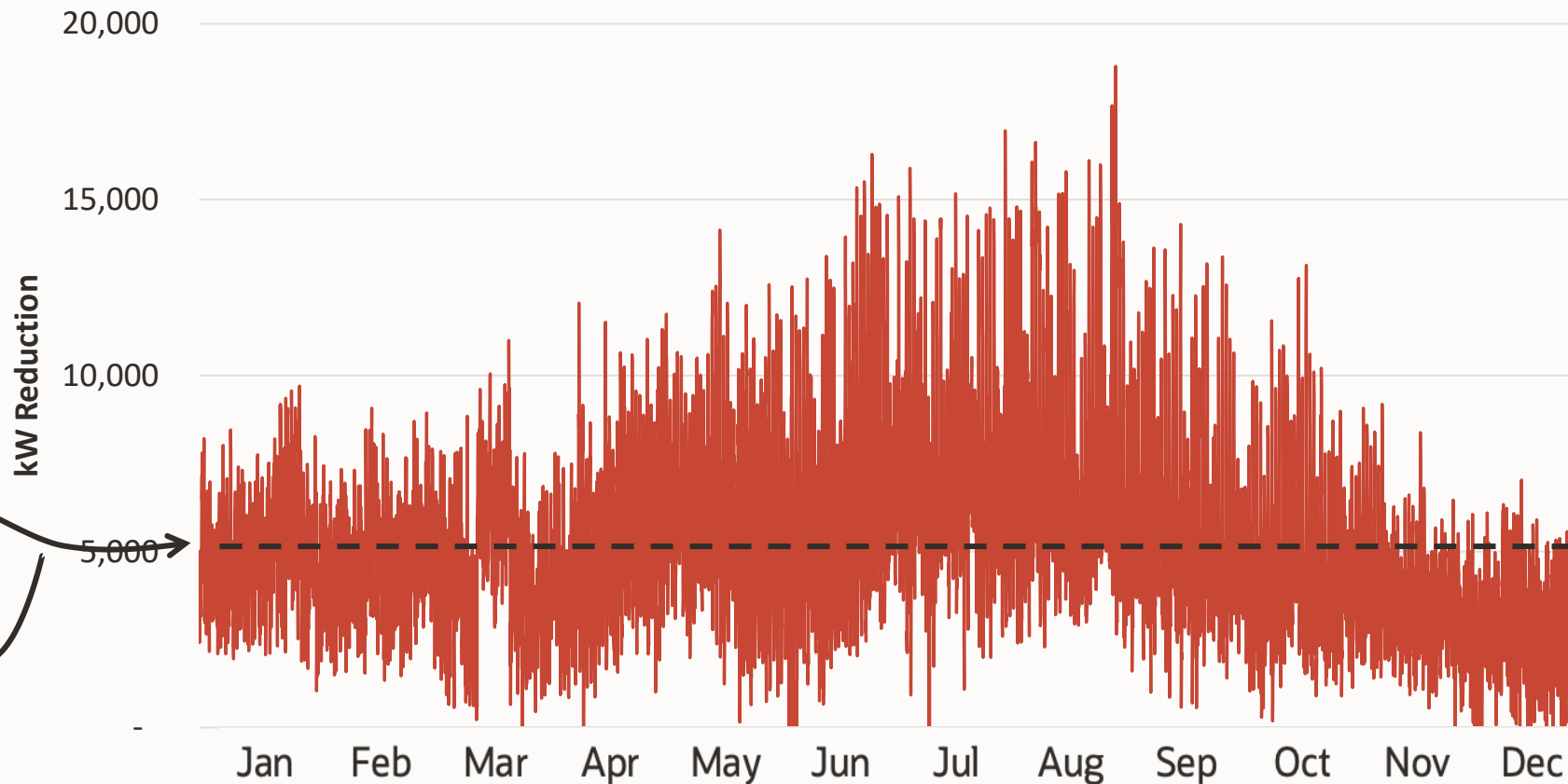


Things to Note

- Usage reduction mirrors usage across the year
- Reduction in usage can be substantial – here it's ~1% of Residential usage, 45 GWh of energy savings
- One way to think about our baseload reduction is $45 \text{ GWh} \div 8,760 = \sim 5,100 \text{ kW}$ any hour of the year.

Home Energy Report kWh Reduction for a Typical HER Program (Southwestern Utility)

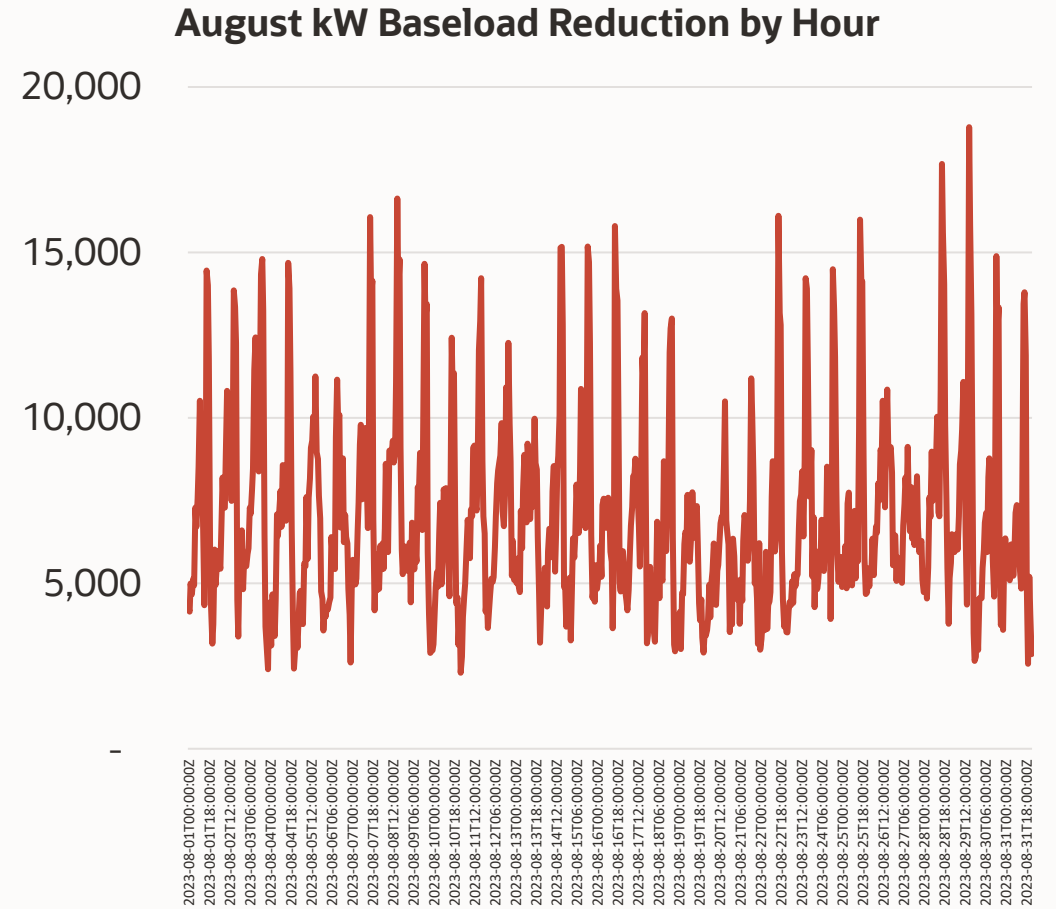
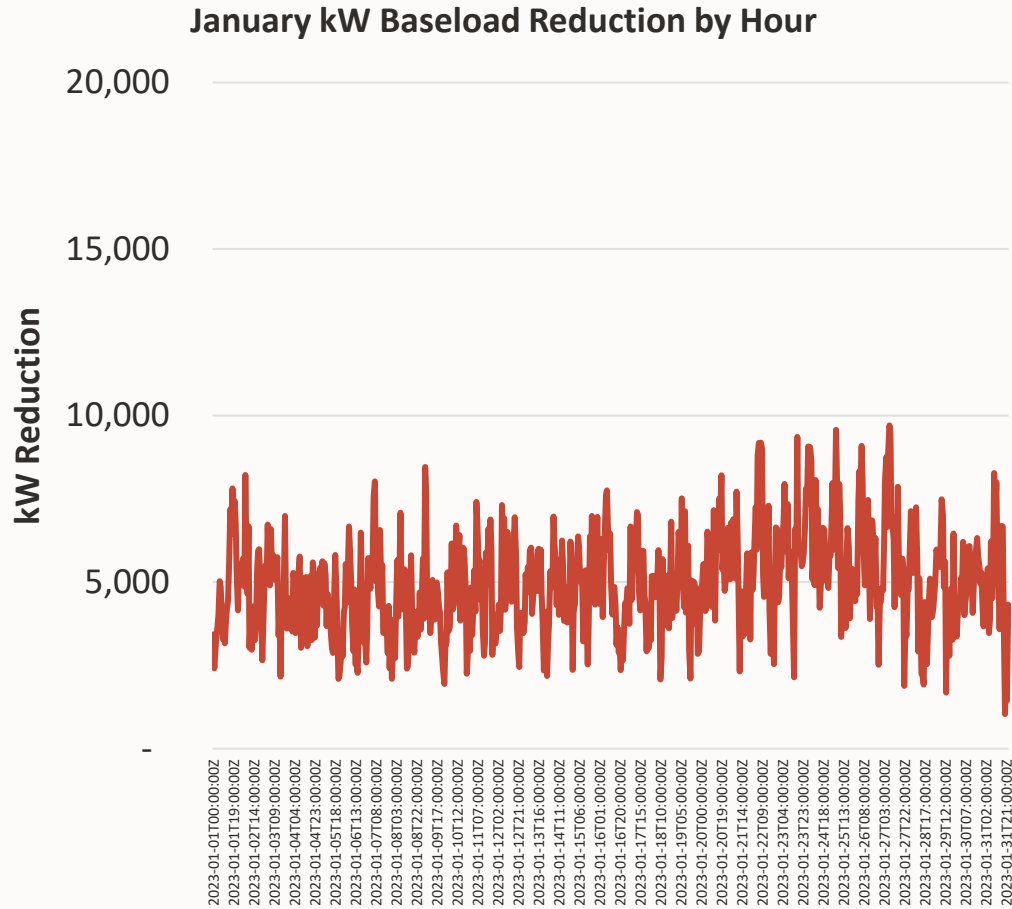
kW Reduction 2023



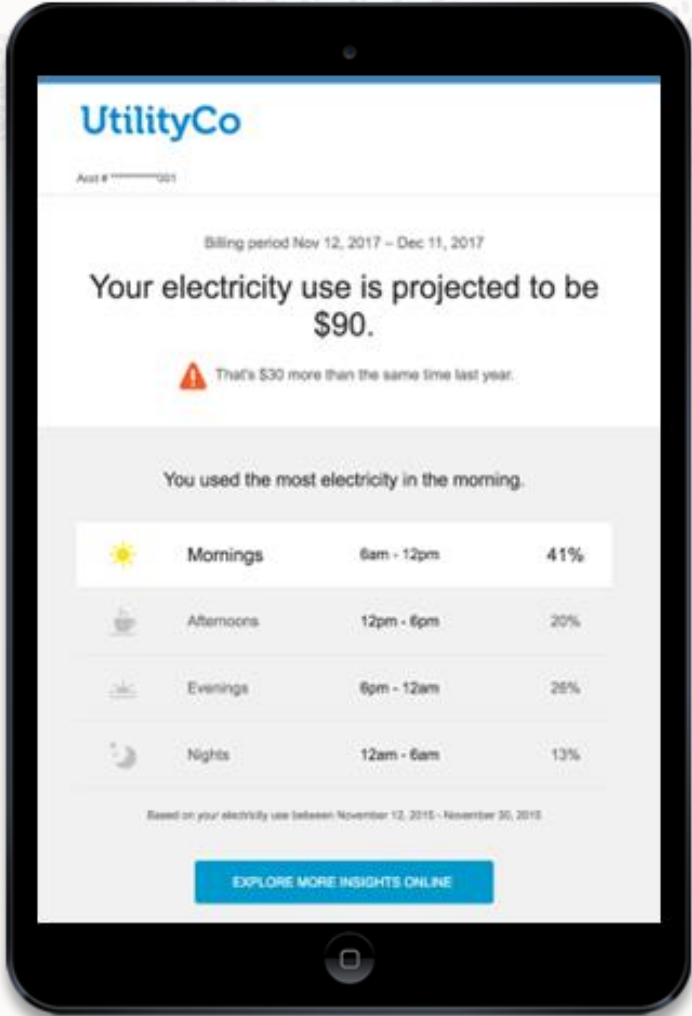
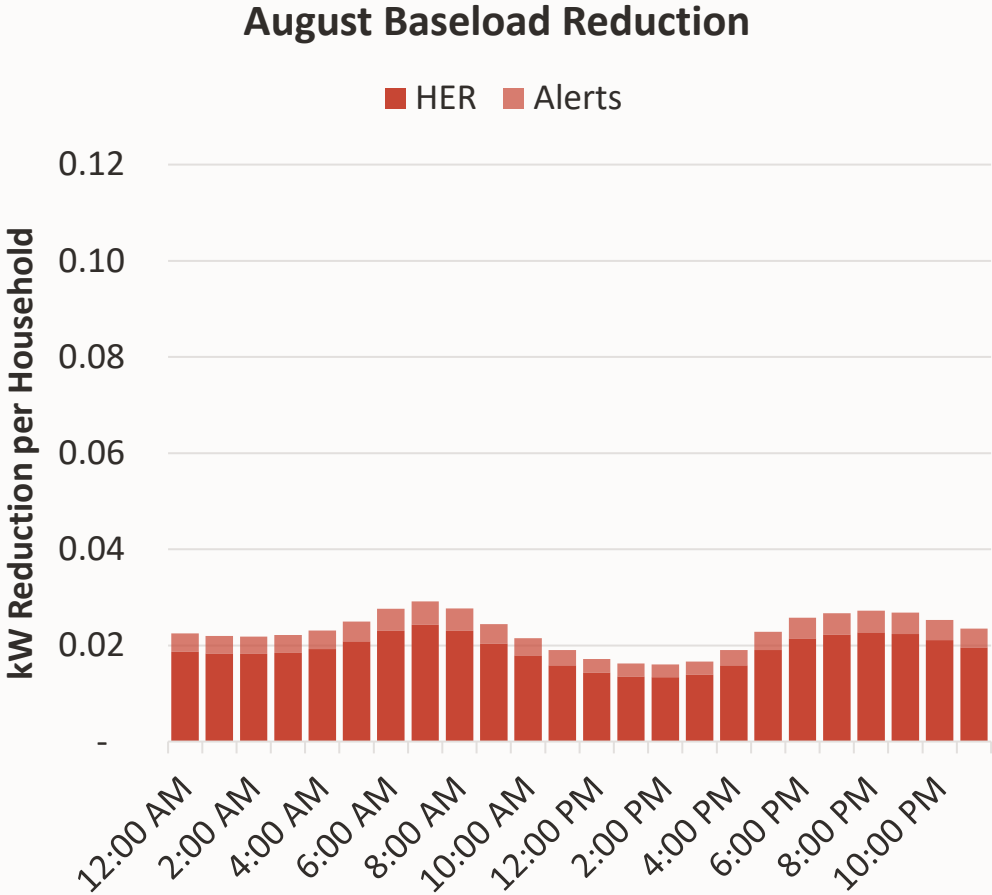
Things to Note

- One way to think about our baseload reduction is $45 \text{ GWh} \div 8,760 = \sim 5,100 \text{ kW}$ any hour of the year.
- But the baseload really changes with usage.
- Our utility partners get the most value in their peakiest times

At that utility we are essentially a 4 MW baseload resource in January and a 5 MW resource in August, with 10-18 MW during peak



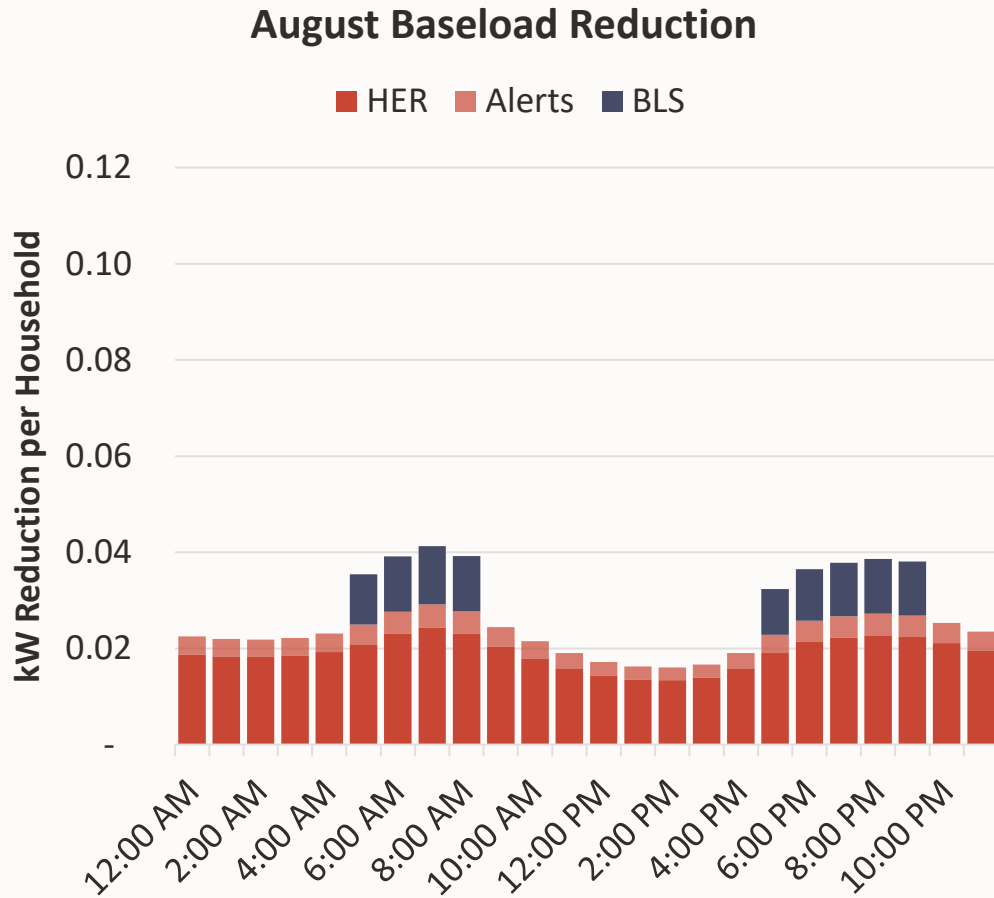
Peak Day Baseload Stack Step 1b: Alerts



*Reflects savings post ramp-up



Peak Day Baseload Stack Step 2: Behavioral Load Shaping



UtilityCo
 Ana Rodriguez
 Acct ****1234

😊 Great job! You spent \$6 less on electricity during peak hours this week

This week's peak costs: \$37
 Last week's peak costs: \$43

On weekdays, electricity is 1.5x more expensive from 4pm-9pm

Time	Off-peak (\$)	Peak (\$\$\$)
12am	Low	None
4pm	Low	High
9pm	Low	High
11pm	Low	None

Here's how you used electricity this week

What parts of your routine could you do at off-peak times?

Legend: Off-peak (\$) (blue), Peak (\$\$\$) (orange)

This data is based on your average weekday electricity use from July 9-13.

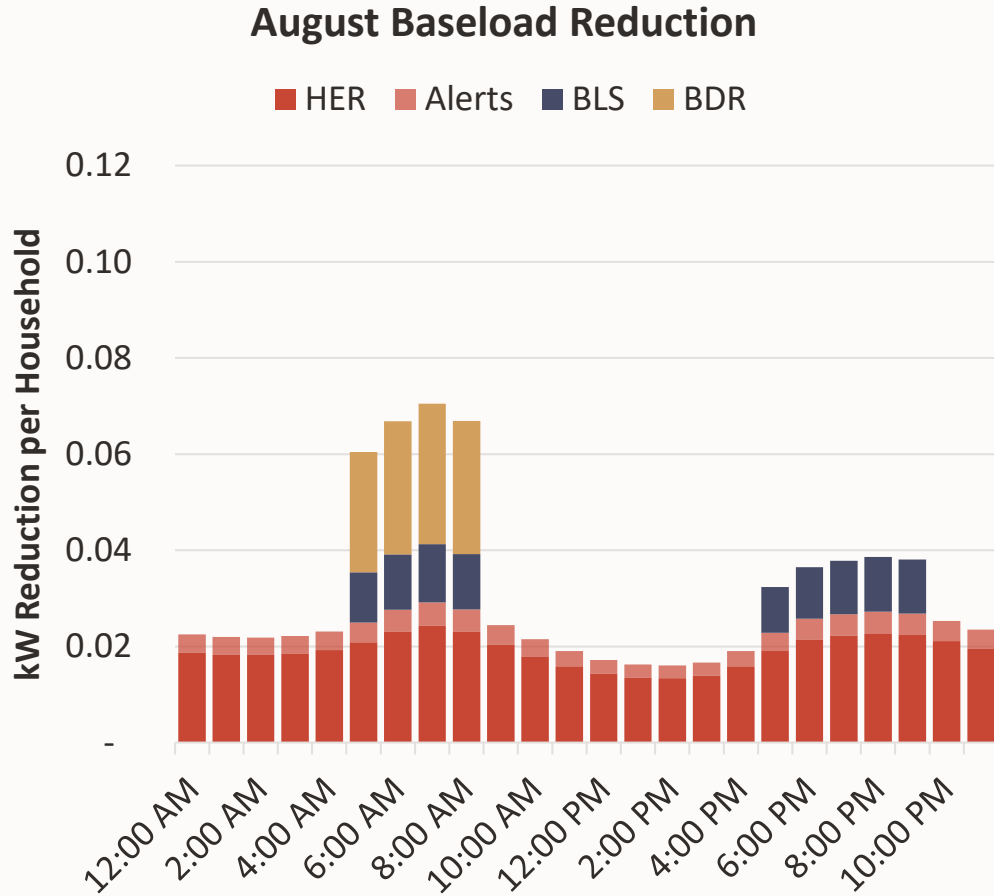
Precool your home before peak hours

If you'll be home during peak hours, precool your home beforehand. Program the air conditioning to run beforehand, then turn it off during peak hours and enjoy the cool air you have stored up.

[SEE MORE WAYS TO SAVE](#)



Peak Day Baseload Stack Step 3a: Behavioral Demand Response (BDR)



UtilityCo Account #****7890

Today is a peak day

Please join your community in reducing energy use today, July 12, from **1pm - 6pm**.

How you did on the last peak day

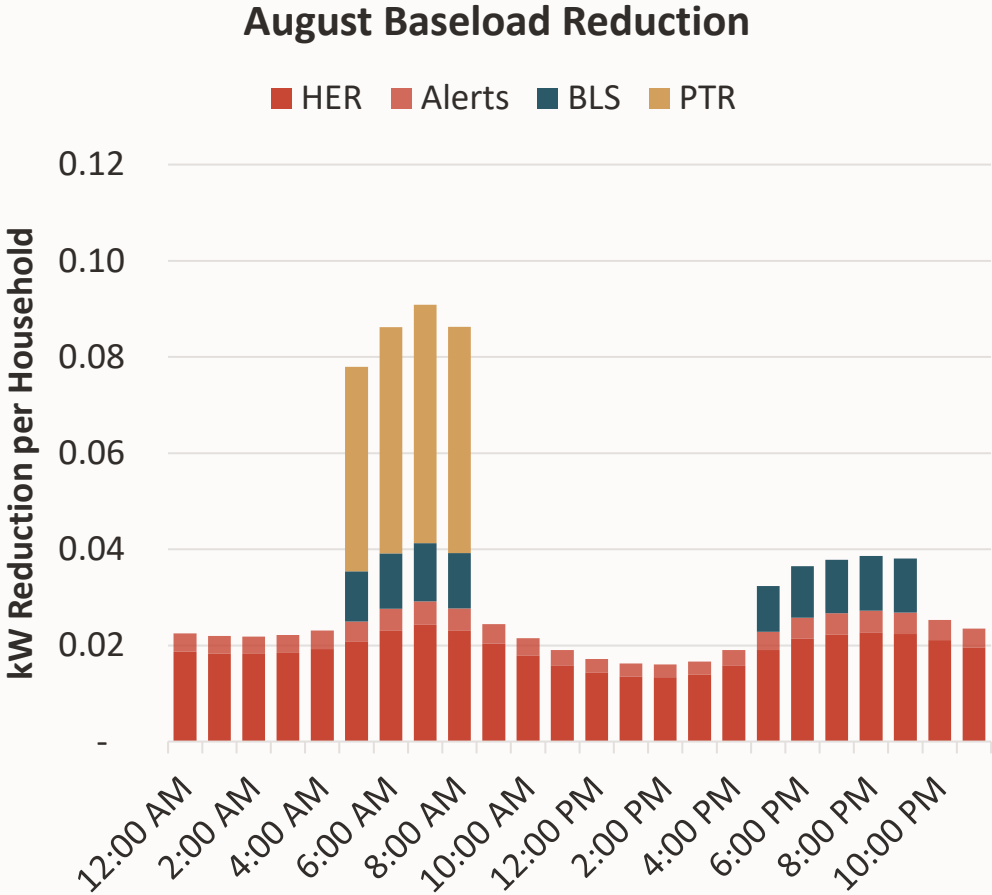
You were the 23rd most efficient home in your area, moving up 10 spots since the last peak day.

Rank	Efficiency (kWh)
1st	1.0 kWh
...	
21st	5.0 kWh
22nd	5.6 kWh
23rd	6.1 kWh
24th	6.8 kWh

■ You



Peak Day Baseload Stack Step 3b: Peal Time Rebates (PTR)



bge
AN EXELON COMPANY

Earn money by saving electricity during a Peak Day.

July 21
1pm - 7pm

Help your community save more this Energy Savings Day

Join fellow Utility Company customers by saving electricity and earning money on Peak Days this summer. We'll follow up with you after the event to let you know how you did.

What is a Peak Day?

During hot days when demand is high, energy can seem expensive. By using less energy during peak days you can help keep costs down for everyone.

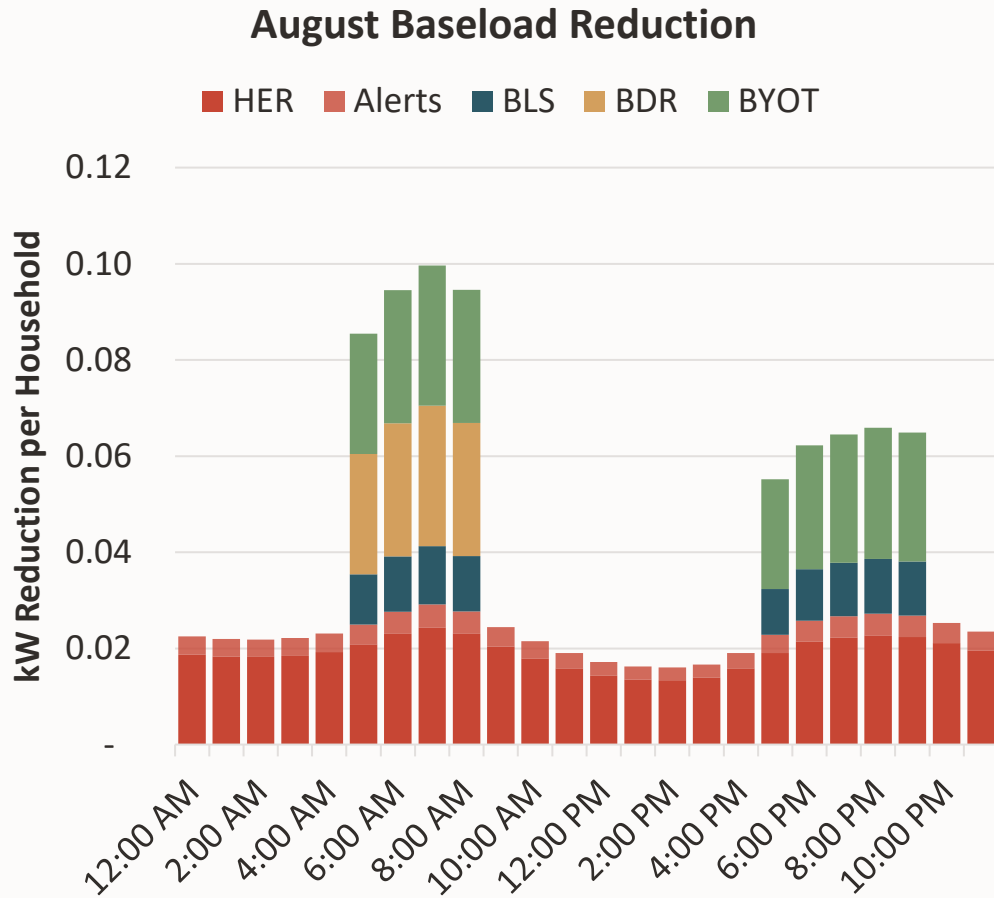
Ways to Save

Raise your thermostat temperature to 78°F

Decreasing your use of air conditioning during Peak Events is the most effective way to save energy. Most people find they can raise



Peak Day Baseload Stack Step 4: BYOT

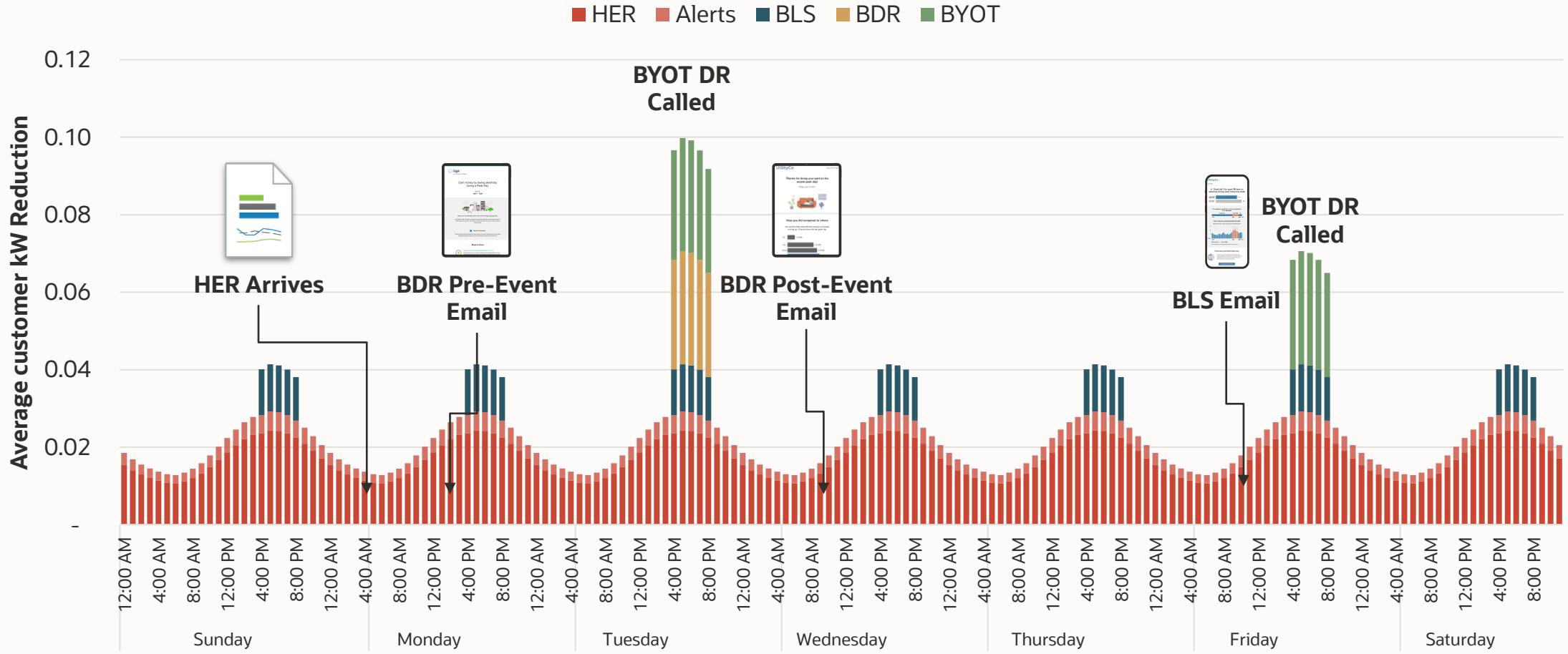


Key notes on population

- Some snapback associated with BYOT
- **Assumes 8% population coverage**



A summer week in the life of our baseload stack



Policy Considerations

1. Value Retail Market Reductions in Demand

- → Review IIJA updates to PURPA
- Create passive demand reduction goals or BCA value

2. Address Consumer Communications Challenges