



To Save Money or Avoid Overspending?

The Impact of Gain vs. Loss Framing on TOU Rate Comprehension

November 14, 2022

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Convened by:

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Load Shifting | TOU Rates

- Decarbonizing our grid requires utility customers to change when they're using energy.
- Time-of-Use (TOU) rates better map end-customer electricity costs to their utility's costs for generating or procuring that electricity.
- They charge different per kWh prices at different times of day



EVERY DAY (WEEKDAYS AND WEEKENDS)



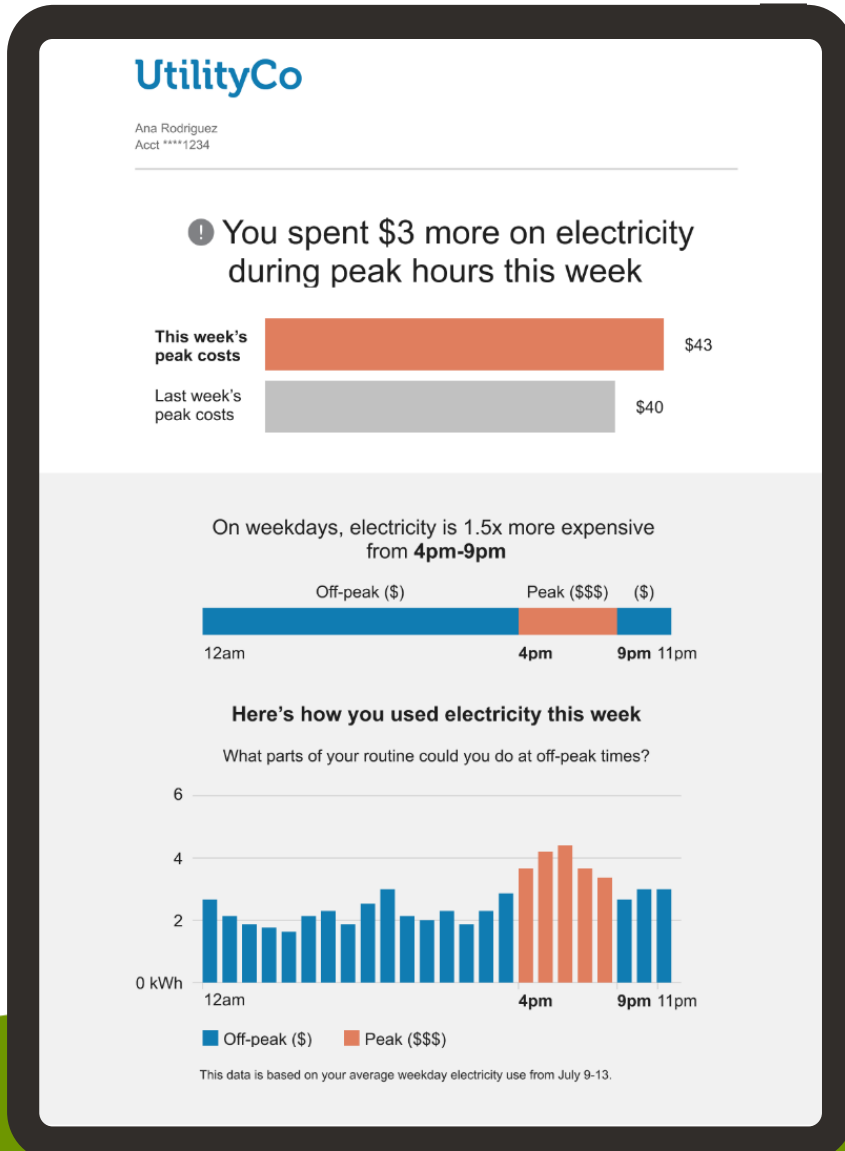
PG&E E-TOU-C Rate Plan

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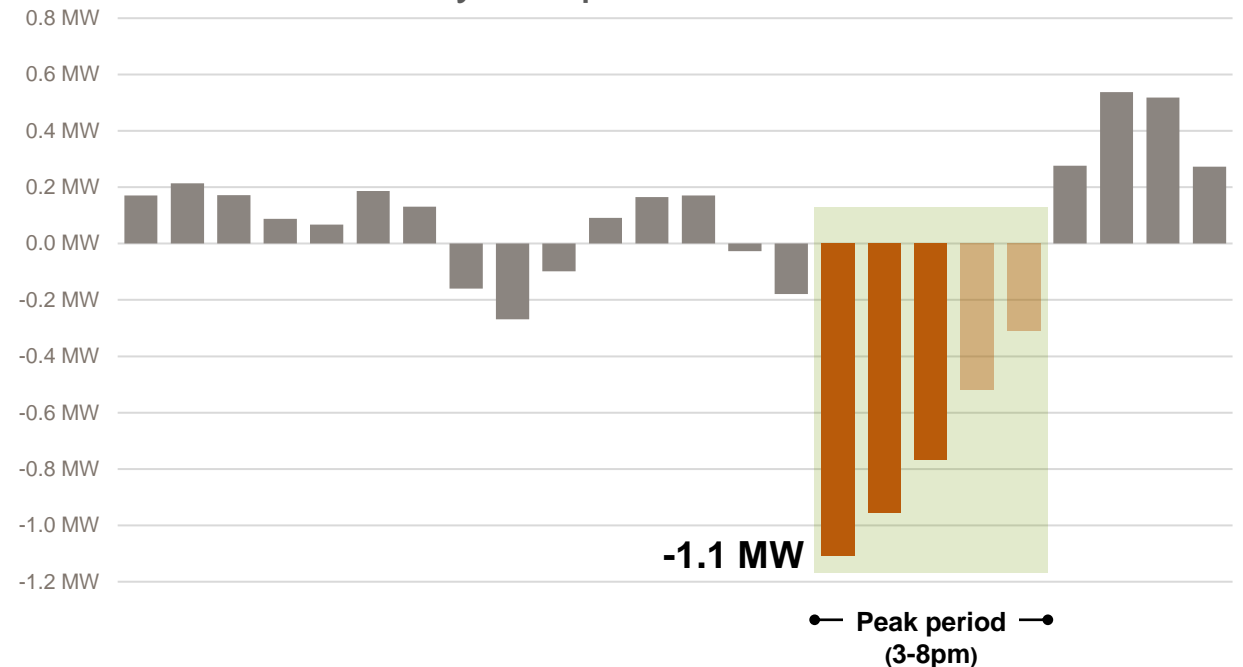


Load Shifting | Opower's TOU Rate Coach

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Case Study: 40,000 APS customers July - September 2021



Load Shifting | Opower's TOU Rate Coach

What is the impact of gain vs. loss framing on TOU rate comprehension and motivation?

UtilityCo

Ana Rodriguez
Acct ****1234

! You spent \$
during peak

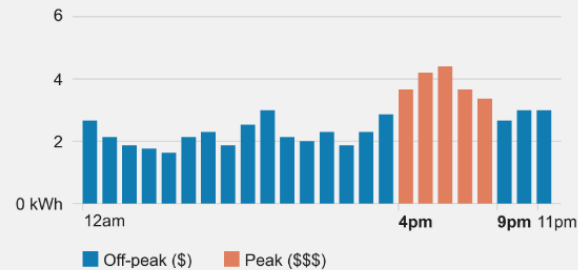
This week's
peak costs
Last week's
peak costs

On weekdays, elec
from
Off-peak (\$)

12am 4pm 9pm 11pm

Here's how you used electricity this week

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

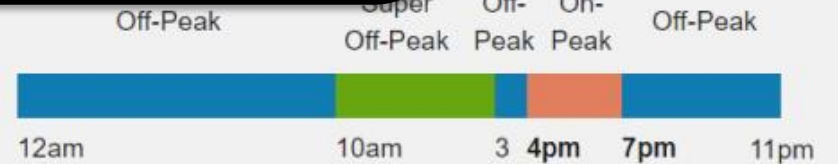


This data is based on your average weekday electricity use from July 9-13.

On weekdays, electricity is 1.5x more expensive

4PM – 7PM on weekdays.

the lowest off-peak
s (Nov-Apr bills)



Framing Study | Methodology

Case Study: TOU Rate Coach Loss vs. Gain Framing

- Online panelists randomly assigned one of two versions: **loss frame** or **gain frame**
- Each treatment exposed to **~320 US-based participants**
- Customers given very brief explanation of what a “time-of-use” rate is; also asked about familiarity with TOU rates
- Respondents reviewed communications for at least 45 seconds, then asked a battery of survey questions about their reactions

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Framing Study | Treatments

Loss

Gain

UtilityCo
Ann Rodriguez
Ann 111-1234

Using electricity during on-peak hours is costly

Electricity is 1.5x more expensive from 4PM - 7PM on weekdays.

Here's how you used electricity this week

You spent \$3 more on electricity during on-peak hours.

This week's on-peak costs: \$43
Last week's on-peak costs: \$40

What parts of your routine could you shift away from on-peak hours?

We've estimated that 80% of your on-peak electricity use came from:

- Cooling: around 34 kWh
- Dryer Use: around 11 kWh
- Water Heating: around 9 kWh

UtilityCo
Ann Rodriguez
Ann 111-1234

Take a look at your on-peak electricity costs for your most recent bill

You spent \$16 more on electricity during on-peak hours compared to your last bill.

This bill's on-peak costs: \$14
Last bill's on-peak costs: \$0

On-peak hours are from 4PM - 7PM. Electricity is 1.5x more expensive during this time.

We've estimated your top electricity uses during on-peak hours so you can focus on where to save.

- Cooling: \$24
- Dryer Use: \$18
- Water Heating: \$13

One way you can save

Delay running your dryer.
Dryers use much more electricity than washing machines. To save money, try waiting until off-peak hours to dry your clothes. Some dryers even have a delay start feature.

SEE MORE WAYS TO SAVE.

How do we know how you use energy?
Thanks to data from your smart meter, we can identify patterns in your electricity use that give us an idea of what appliances are using electricity in your home. We can match those end uses to different times of day to determine what appliances you use during peak hours. To get the most accurate view of your appliance use, make sure your [home profile is up-to-date](#).

Peak pricing does not apply on holidays, including New Year's Day, President's Day, Good Friday, Memorial Day, Independence Day, Thanksgiving, Christmas, and the following Monday if any of these holidays fall on a Sunday.

Estimated from these areas: Monitor your electricity use.

Utility name: Ann Rodriguez, 1234 Main Street, Suite 100, Arlington, VA 22209, 800-555-1234

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UtilityCo
Ann Rodriguez
Ann 111-1234

Small changes can make a big impact on your electricity costs

Your goal is to shift electricity use to off-peak hours (10AM - 3PM) to save money.

Electricity costs 27% less during off-peak hours on weekdays.

Here's how you used electricity this week

You spent \$3 more on electricity during on-peak hours.

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UtilityCo
Jan 1 - 30, 2023

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Utility name: ABC Water & Gas Co. | Address: 123 Main St. | Phone: 555-1234 | Copyright 2023. All rights reserved.

UtilityCo
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Framing Study | Treatments

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Cooling	Dryer Use	Water Heating
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What could you do differently next week?

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i On-peak hours are from **4PM - 7PM**. Electricity is **1.5x more expensive** during this time.

i **Tip:** you can save money by shifting your electricity use to **off-peak hours (10AM - 3PM)**. Electricity costs **27% less** during this time!

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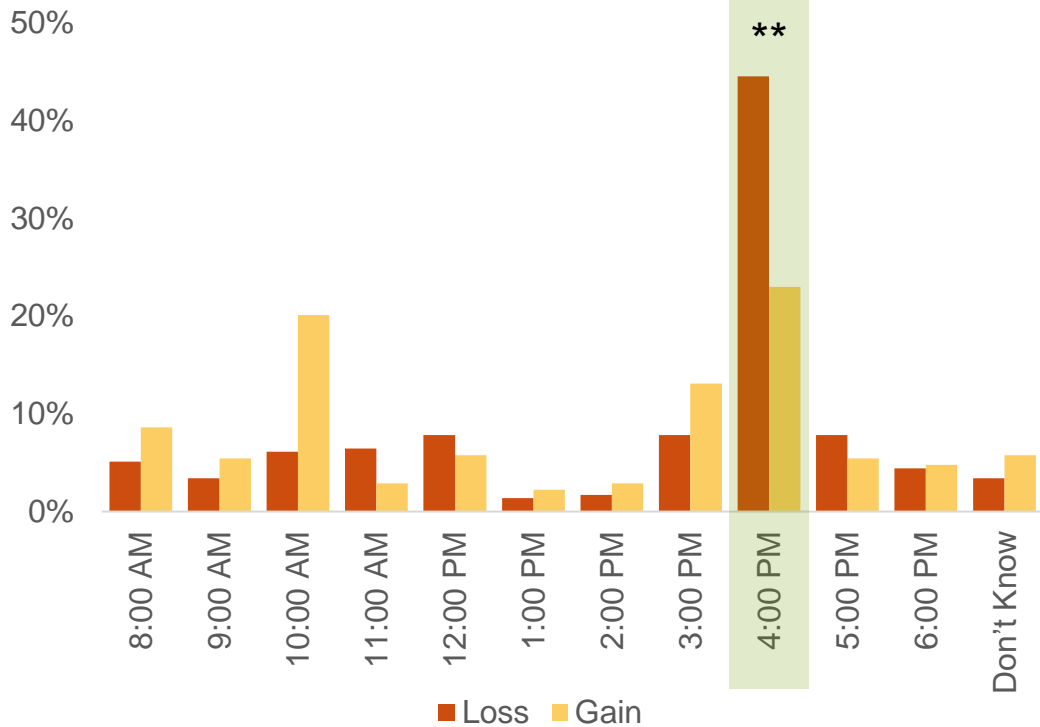
Delay running your dryer

Framing Study | Results

Recall: most expensive hours

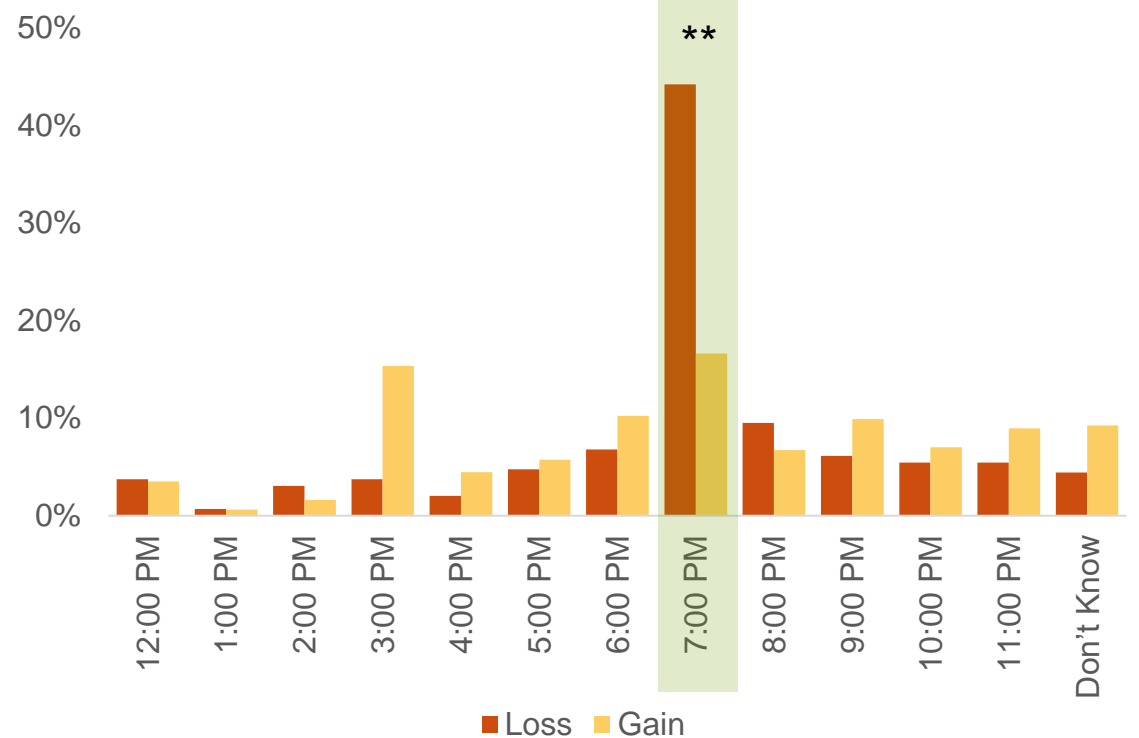
**90% significant difference

Start Time



- Loss framing more strongly orients customers to the peak period
- Gain framing orients some incorrectly to the off-peak period

End Time



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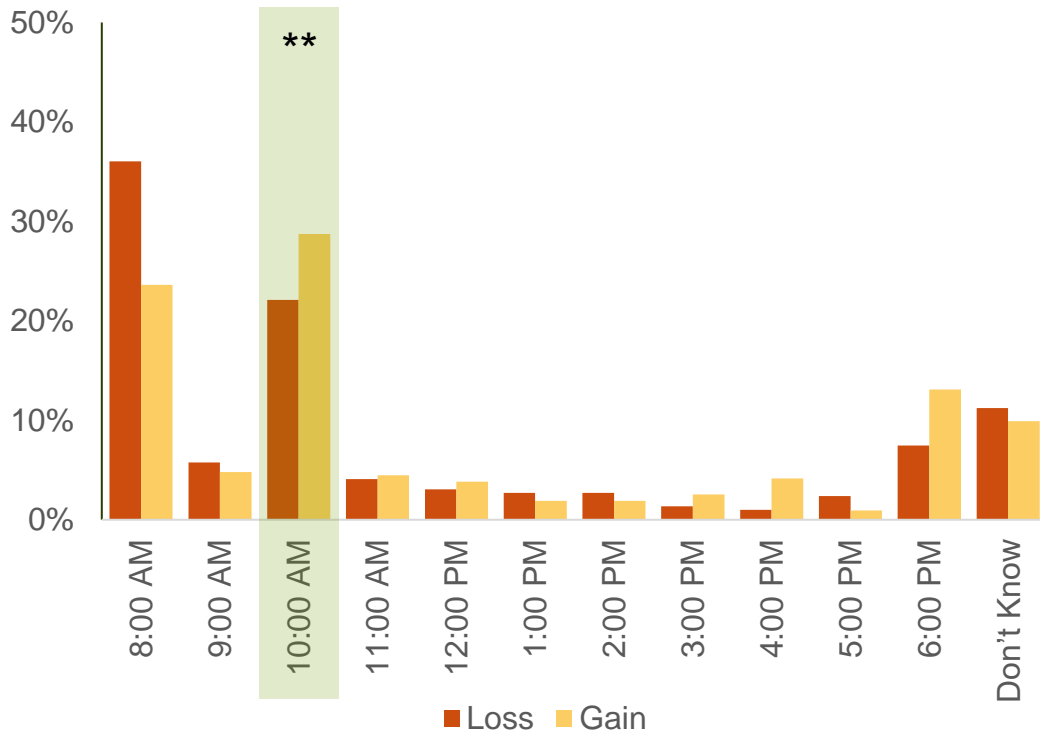
Framing Study | Results

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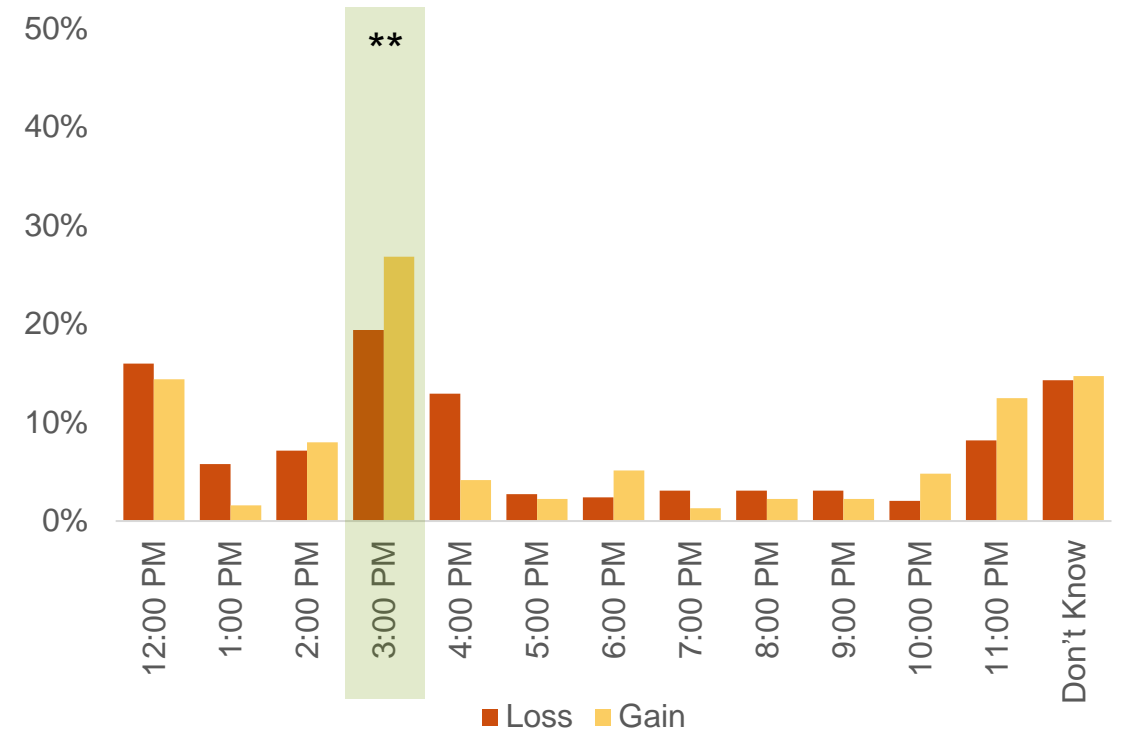
**90% significant difference

- Gain framing has some smaller effect on off-peak awareness
- Off-peak hours are harder to comprehend and recall overall compared to peak hours

Start Time



End Time



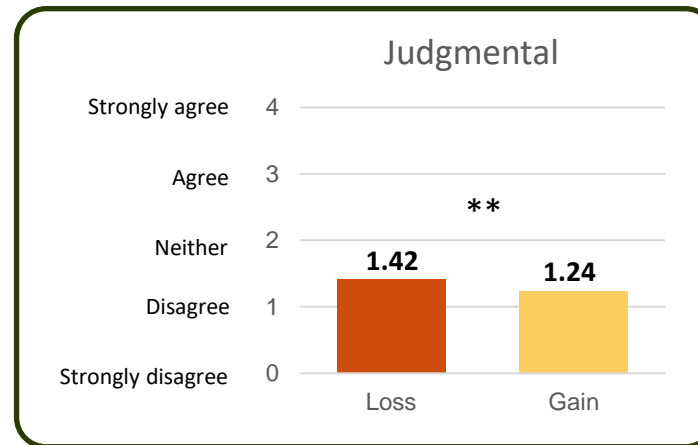
Framing Study | Results

No statistically significant differences (90%) found in:

- How do you **feel** about your energy use during on-peak hours?
- How **easy** do you think it is to reduce your usage during on-peak hours?
- How **likely** are you to **reduce** your electricity use during the **most expensive** times?
- How **likely** are you to **shift** some of your electricity use to the **least expensive** times?

• Feelings about the report:

- Easy to understand
- Accurate
- Helpful
- Trustworthy
- Confusing
- Vague
- Complicated



Framing Study | Implications & Further Research

- **Decision:** Stick with loss framing in most cases for Opower's TOU Rate Coach
- **Further Research:** There are many more variations that we'd like to test:
 - Different colors for TOU periods
 - Messaging that directly highlights both on-peak and off-peak period times
 - Data insights about off-peak usage
 - And more!

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Thank you!



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