

# What Lies Beneath

**The relationship between savings and customer engagement with behavioral program feedback mechanisms**

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# Home Energy Reports

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## Indirect feedback mechanisms

- Historical use
- Normative comparisons
- Savings tips
- Paper or electronic copy

## Gaining popularity

- Used by over half of the largest 50 utilities in US
- 1% to 3% electric reduction
- High ROI / low \$/kWh

## Many implemented as randomized control trials (RCT)

- Facilitates evaluation
- Increases internal validity

# How Matters

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- What behaviors change?
  - Savings has to occur through some kind of behaviors.
  - Interaction with other programs?
  - Persistence?
- How do people engage?
  - Rational messages → Deep engagement
  - Emotional messages → Shallow engagement
- What parts of reports matter most?
- Credibility
  - Improvement
  - Sustainability

# Niagara Mohawk HERS Program

- 189,000 treatments
- 94,000 controls
- 20 months evaluated

## Billing analysis (difference of difference)

- Annual Savings:
  - 1.97% electric
  - 0.58% gas

## Surveys

- Completes:
  - 814 treatment
  - 810 control

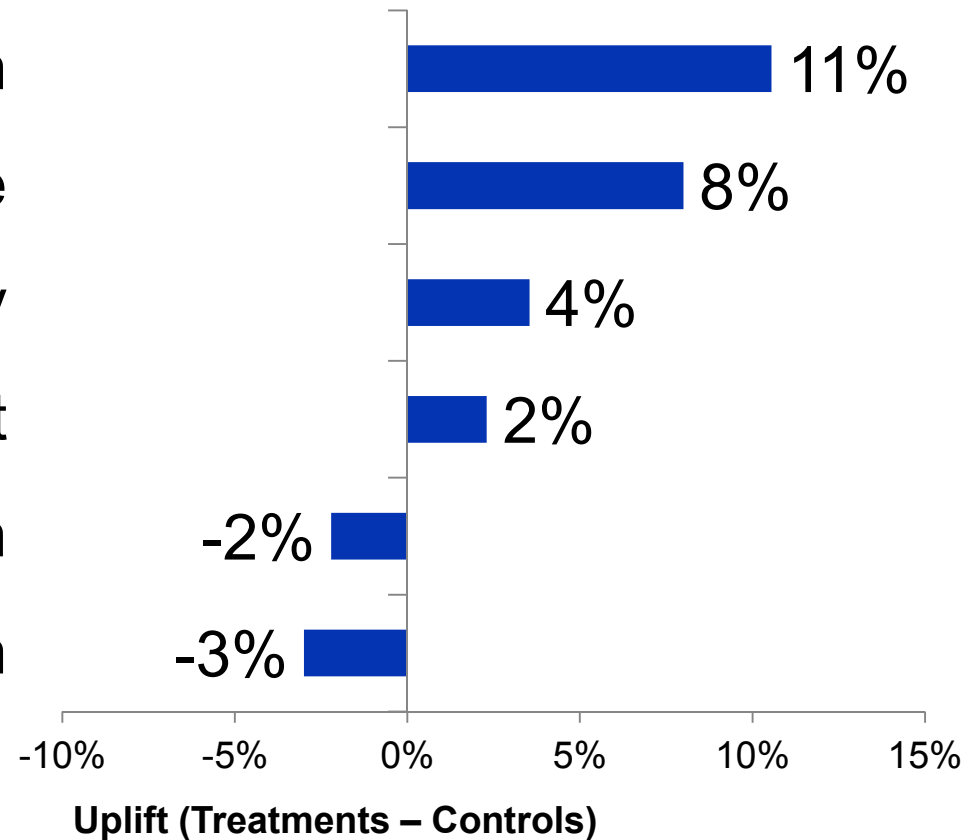
# Niagara Mohawk HERS Evaluation: Survey

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- Treatments vs. Controls
  - ~80 Behaviors
- Treatments only
  - Usefulness of components
    - Self-comparison
    - Tips
    - Neighbor comparisons
  - Depth of engagement
    - Did not remember receiving reports
    - Remembered report
    - Read report
    - Read report and found it useful

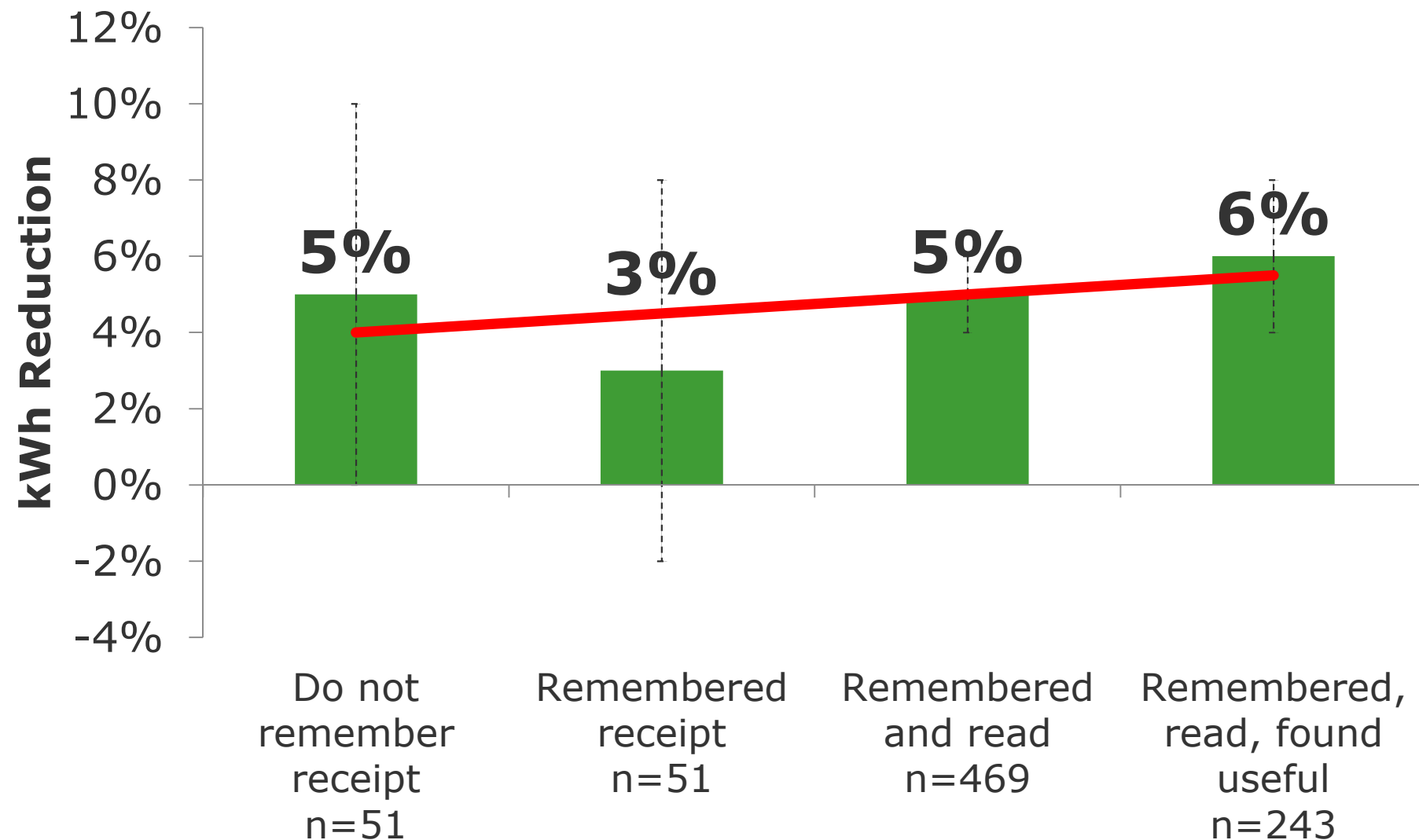
# Behavior Differences

Turn off lights more often  
Cool less when nobody home  
Set computer on standby  
New prog. Tstat  
Set TV on standby less often  
Use dryer more often

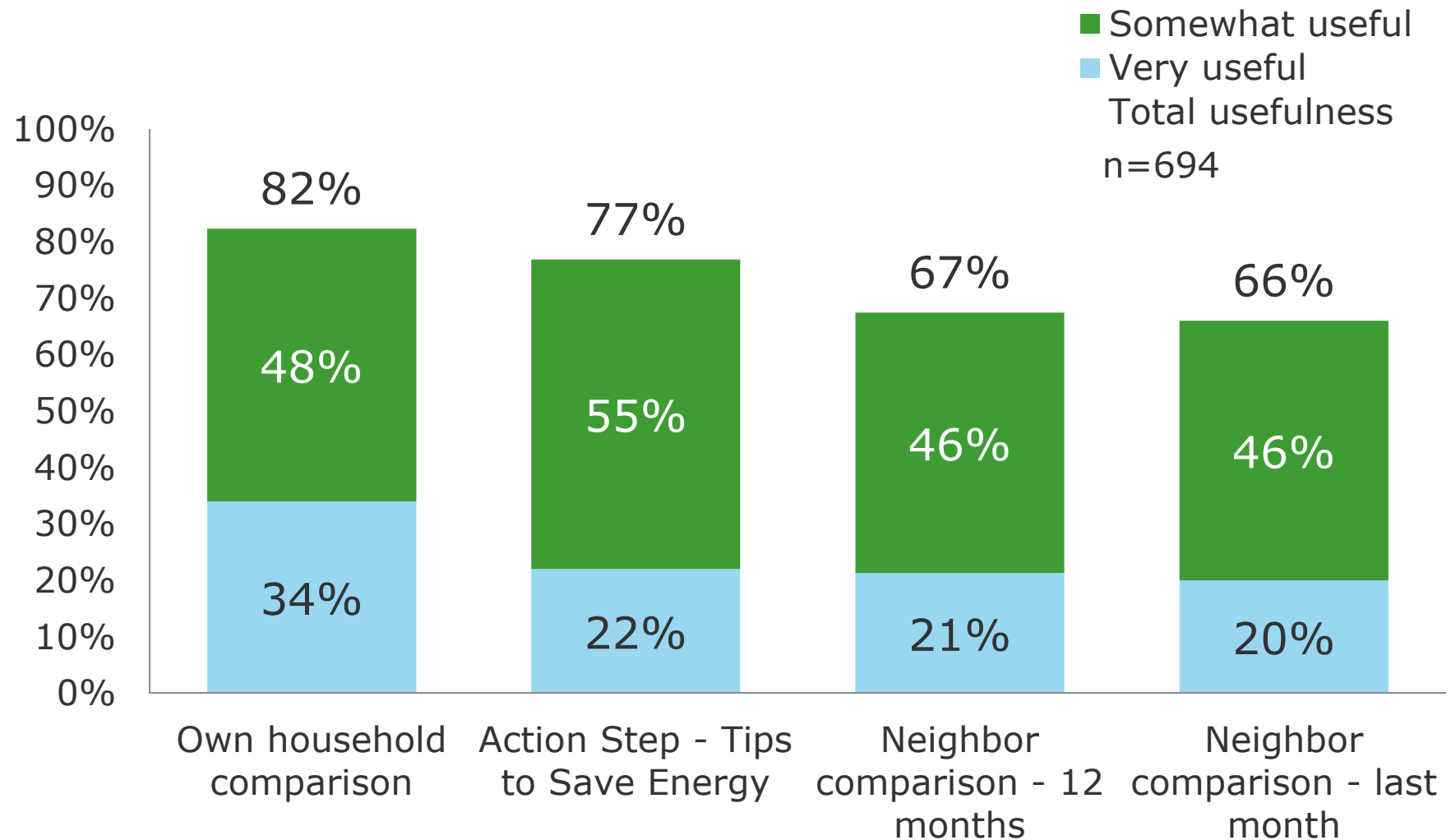


Gas: billing data → water heating changes

# Savings by Depth of Engagement



# Niagara Mohawk HERS Evaluation: Component Usefulness





# Savings by Component Usefulness

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Average kWh Savings by 2x2 Component Usefulness

	Self-comparison not useful	Self-comparison useful
Norms not useful	4%	4%
Norms useful	6%	6%

# Conclusions

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## Energy / Conservation more salient

- Nudging everyday behaviors
- n.s. engagement effect
- Self-comparisons preferred ( $p < .01$ )
  - n.s. effect on savings

## Lessons about methods

- Survey along the way
  - Journals?
  - Web 5.0?
- Consumption = High variance
  - High n
  - Leverage experimental design whenever possible

# Thank You!

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**[www.dnvgl.com](http://www.dnvgl.com)**

**SAFER, SMARTER, GREENER**

**Home Energy Report**  
Account number: 1234567890  
Report period: 05/26/11 – 06/25/11

We are pleased to provide this personalized report to help you save energy.

- The purpose of the report is to:
- Provide information
  - Help you track your progress
  - Share energy efficiency tips

This information and more is available at [nationalgridus.com/EnergyReportsNY](http://nationalgridus.com/EnergyReportsNY)



**Last Month Neighbor Comparison** | You used **13% LESS** energy than your efficient neighbors.



\* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

**Who are your Neighbors?**

- All Neighbors**  
Approximately 100 occupied, nearby homes that are similar in size to yours (avg 2,856 sq ft) and have both electricity and natural gas service
- Efficient Neighbors**  
The most efficient 20 percent from the "All Neighbors" group

**B** How you're doing:

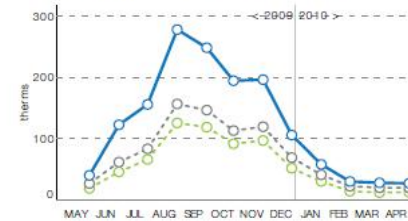
**GREAT** 😊 😊  
Good 😊  
More than average

**C Last 12 Months Neighbor Comparison** | You used **22% MORE** energy than your neighbors. This costs you about **\$404 EXTRA** per year.

**Electricity** | 24% less electricity than your neighbors



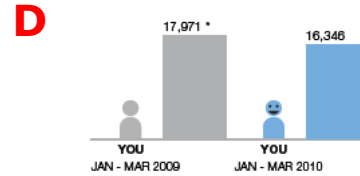
**Natural Gas** | 69% more natural gas than your neighbors



Turn over for savings →

**Personal Comparison**

How you're doing compared to last year:



So far this year, you used **9% less** energy than last year.  
★ You're on pace to use less in 2010

Looking for ways to save even more? Visit [www.nationalgridus.com/EnergyReportsNY](http://www.nationalgridus.com/EnergyReportsNY)

\* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

**Action Steps** | Personalized tips chosen for you based on your energy use and housing profile

**E Quick Fixes**  
Things you can do right now

- Be smart about clothes washing**  
Water heating accounts for about 90% of the energy used for washing clothes.  
Unless your clothes have oily stains, washing with cold or warm water is effective. Some detergents are made specially for cold water, though most detergents will work.  
For more savings, run only full loads and don't use the "sanitary" or "allergy-free" cycles, which use extremely hot water and increase energy use significantly.

**SAVE UP TO \$25 PER YEAR**

**Smart Purchases**  
Save a lot by spending a little

- Spotlight your work spaces**  
Whether you're preparing dinner, writing at a desk, or reading a book, light is important. Instead of spreading it around the room, focus light where you need it most.  
Using desk lamps or under-the-counter lighting for specific tasks brightens important spaces, and it can significantly reduce your energy consumption.  
Most of these lights are also compatible with energy-efficient bulbs.

**SAVE \$15 OR MORE PER YEAR**

**Great Investments**  
Big ideas for big savings

- Pay less to keep outdoor lights on**  
Operating outdoor lights all night could cost you over \$40 per year on your electric bill. Luckily, you can reduce energy usage without sacrificing security or style.  
Incandescent lights with motion sensors only operate when needed, saving you even more than efficient bulbs.  
Or, unplug entirely and install outdoor solar lights, which are available as wall-mounted, post or patio lamps.

**SAVE UP TO \$35 OR MORE PER LIGHT ANNUALLY**

# Home Energy Reports: Introduction

## You're a Utility



- Regulators require you to implement efficiency programs

## Toolkit



- Widget Rebates
- DR programs
- Rates
- Participation ~3%

## Send a Letter → 3% Savings?!



- Home Energy Reports (HERs)
- Powerful
- Incredible

# Agenda

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Home  
energy  
reports  
overview

Niagara  
Mohawk  
evaluation

Exploration  
into how  
HERs work