Using Environmental and Public Health Messages to Motivate Energy Conservation

Wesley Schultz

California State University, San Marcos & Action Research

Kaitlin Phelps

Action Research

Project Team

- **Sponsor**
  - Marsha Walton, NYSERDA
- **Evaluation Review**
  - Alex Dunn, Research Into Action
- **Planning and Design**
  - Jennifer Tabanico, Action Research
  - Joey Schmitt, Action Research
  - Renee Bator, SUNY Plattsburg and Action Research

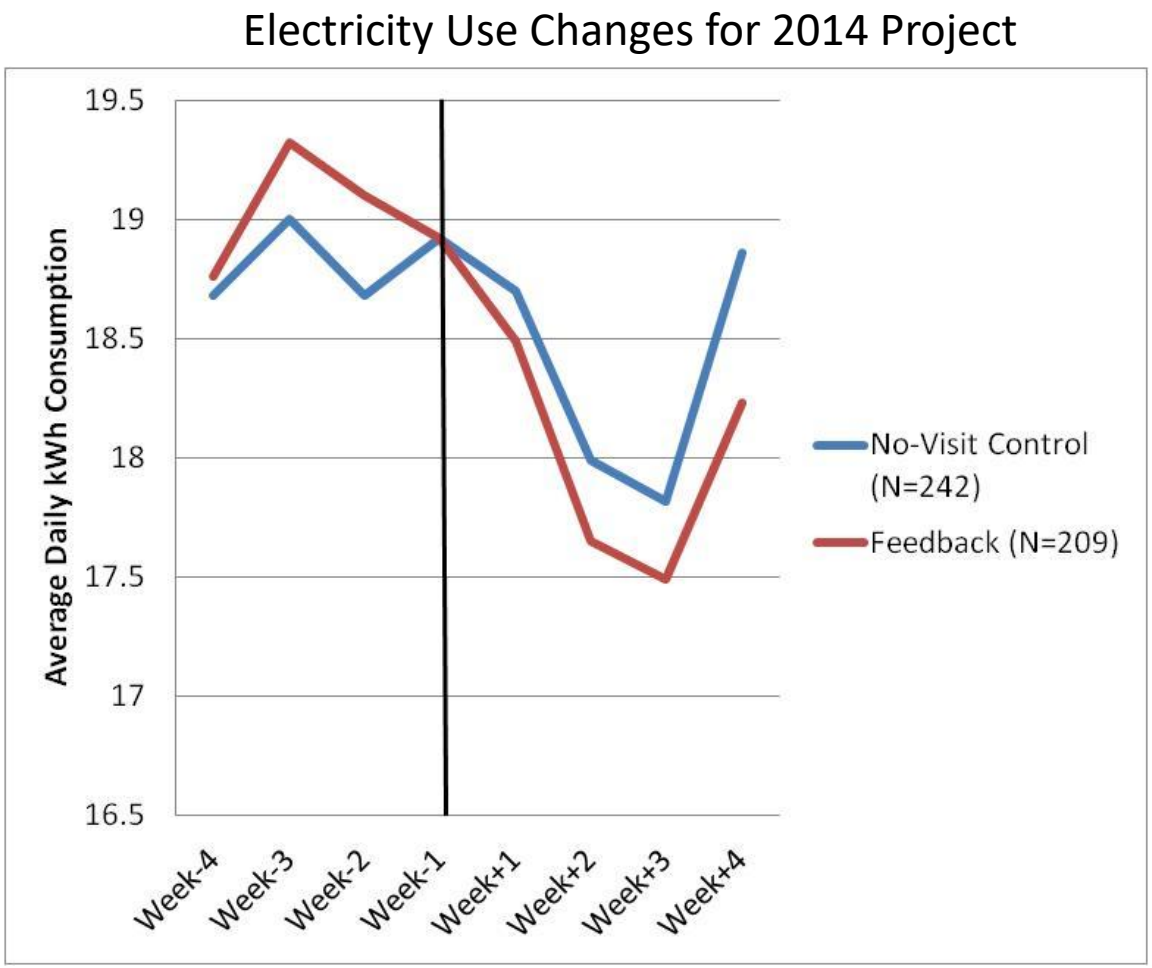
action RESEARCH

Background

- 1035 apartments
  - Landlord pays utilities
- Target Behavior
  - Reduce Summer AC Use
- Non Monetary Strategies
  - Education
  - Feedback
  - Social Norms
  - Intrinsic Priming

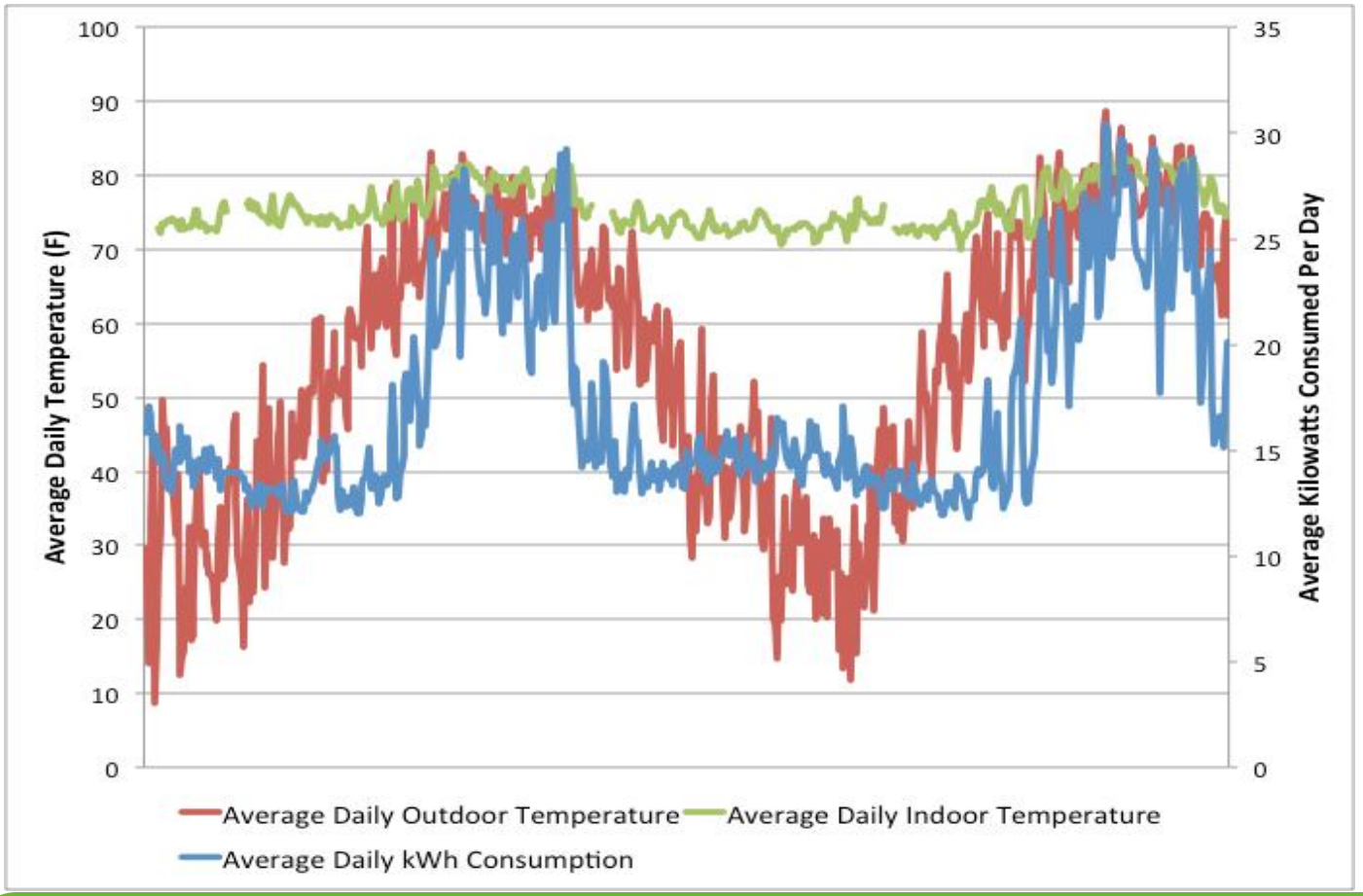
Background

- Building on previous project in same complex (different units)
  - Education
  - Feedback
  - Social Norms
  - In-person visits
  - Free CFL bulb
- 3.1% reduction



Results

- Average daily electricity consumption over time, with outdoor temperature and indoor temperature overlaid



Design

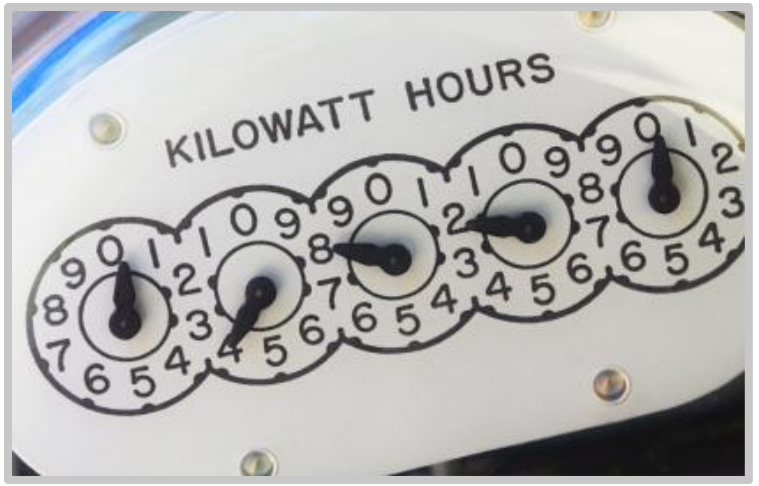
- Experimental Conditions
  - Control
  - Education + Feedback
  - Education + Feedback + Intrinsic prime
  - Delivered 2 times

- Supplemental Materials
  - Room thermometer
  - Hallway posters

Methodology

- Wireless Energy Monitor (WEM)
  - Daily electricity usage (kWh)
  - Previously never shared with residents

- Also collected daily:
  - Average outdoor ambient temperature
  - Average outdoor humidity
  - Indoor apartment temperature



Methodology

- Provide knowledge of how to reduce air conditioning use

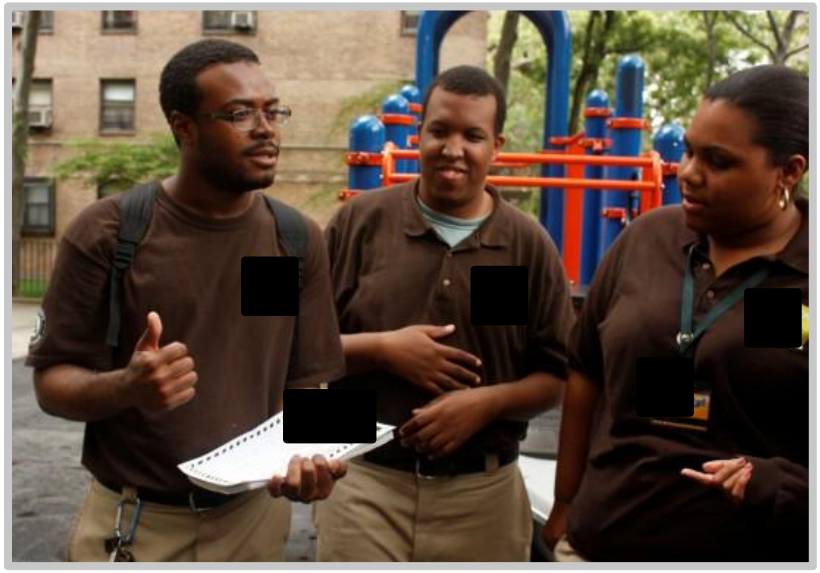
- Follow these easy steps to reduce your AC use:
  - Keep drapes and blinds closed to block out direct sunlight and keep HEAT out
  - Keep windows closed and HEAT out, except when it is cooler than 76º F outside
  - Keep your apartment between 76º - 78º F and use fans to stay COOL
  - Keep AC turned OFF when no people or pets are home

Methodology

- Graphs for flyers
  - Comparing to “efficient neighbors” (lowest 30%) stratified by apartment size
  - Total electricity usage (kWh) for the two weeks
  - Apartment’s total divided by the average kWh usage of efficient neighbors

- Graph Categories
  - 0-.7 = Less
  - .8-1.2 = Same
  - 1.3-1.5 = More
  - 1.6-1.7 = A Lot More
  - 1.8-2.2 = Twice
  - 2.3+=More Than Twice

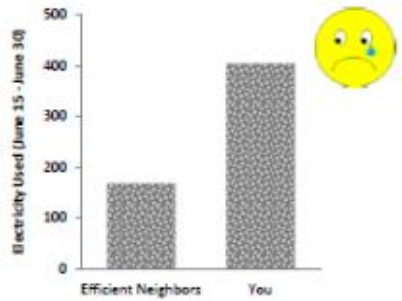
- Packets delivered under door



Feedback Only

Help Save Energy this Summer!

Together we can save energy by reducing our AC use this summer.



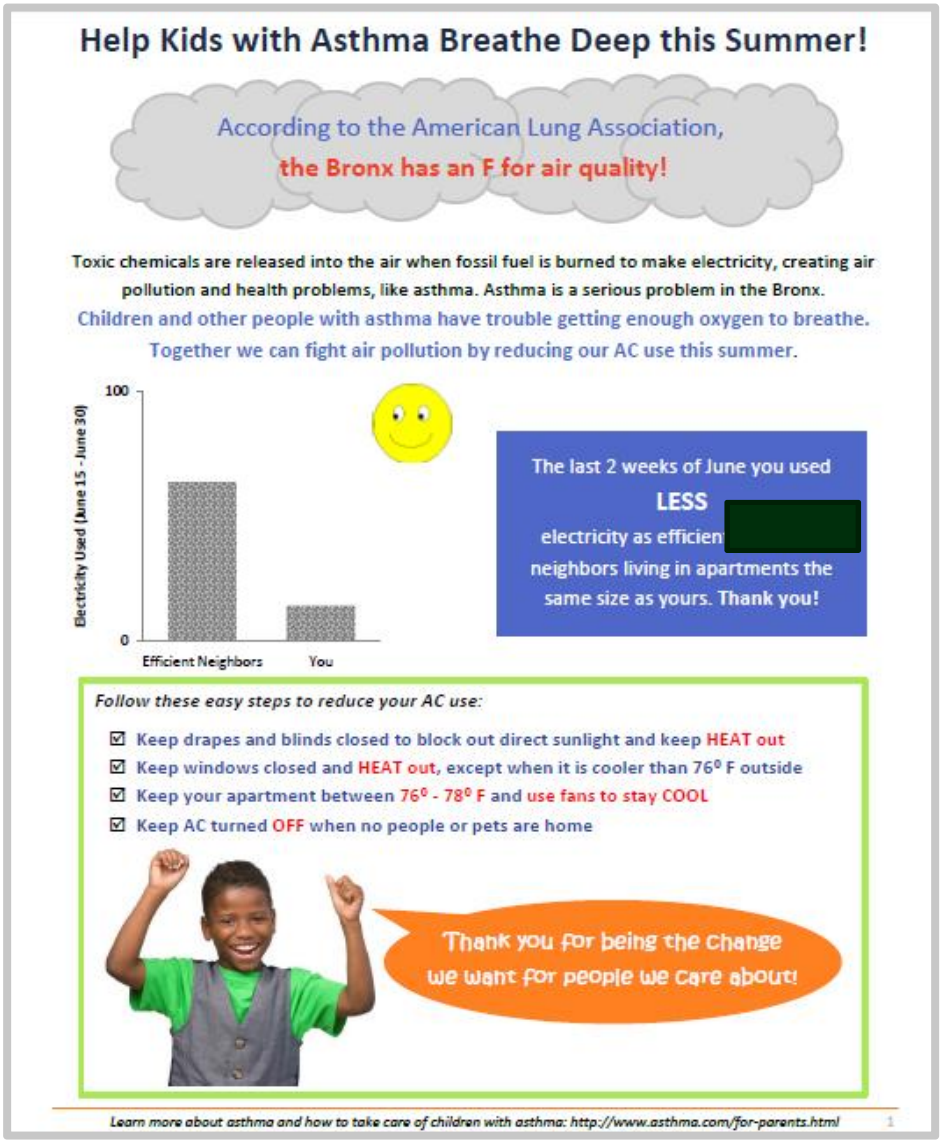
The last 2 weeks of June you used **MORE THAN TWICE AS MUCH** electricity as efficient [redacted] neighbors living in apartments the same size as yours.

Follow these easy steps to reduce your AC use:

- ☑ Keep drapes and blinds closed to block out direct sunlight and keep HEAT out
- ☑ Keep windows closed and HEAT out, except when it is cooler than 76° F outside
- ☑ Keep your apartment between 76° - 78° F and use fans to stay COOL
- ☑ Keep AC turned OFF when no people or pets are home

Thank you!

Feedback + Intrinsic Prime



Help Kids with Asthma Breathe Deep this Summer!

According to the American Lung Association,
the Bronx has an F for air quality!

Toxic chemicals are released into the air when fossil fuel is burned to make electricity, creating air pollution and health problems, like asthma. Asthma is a serious problem in the Bronx.
Children and other people with asthma have trouble getting enough oxygen to breathe.
Together we can fight air pollution by reducing our AC use this summer.

The last 2 weeks of June you used **LESS** electricity as efficien[redacted] neighbors living in apartments the same size as yours. Thank you!

Follow these easy steps to reduce your AC use:

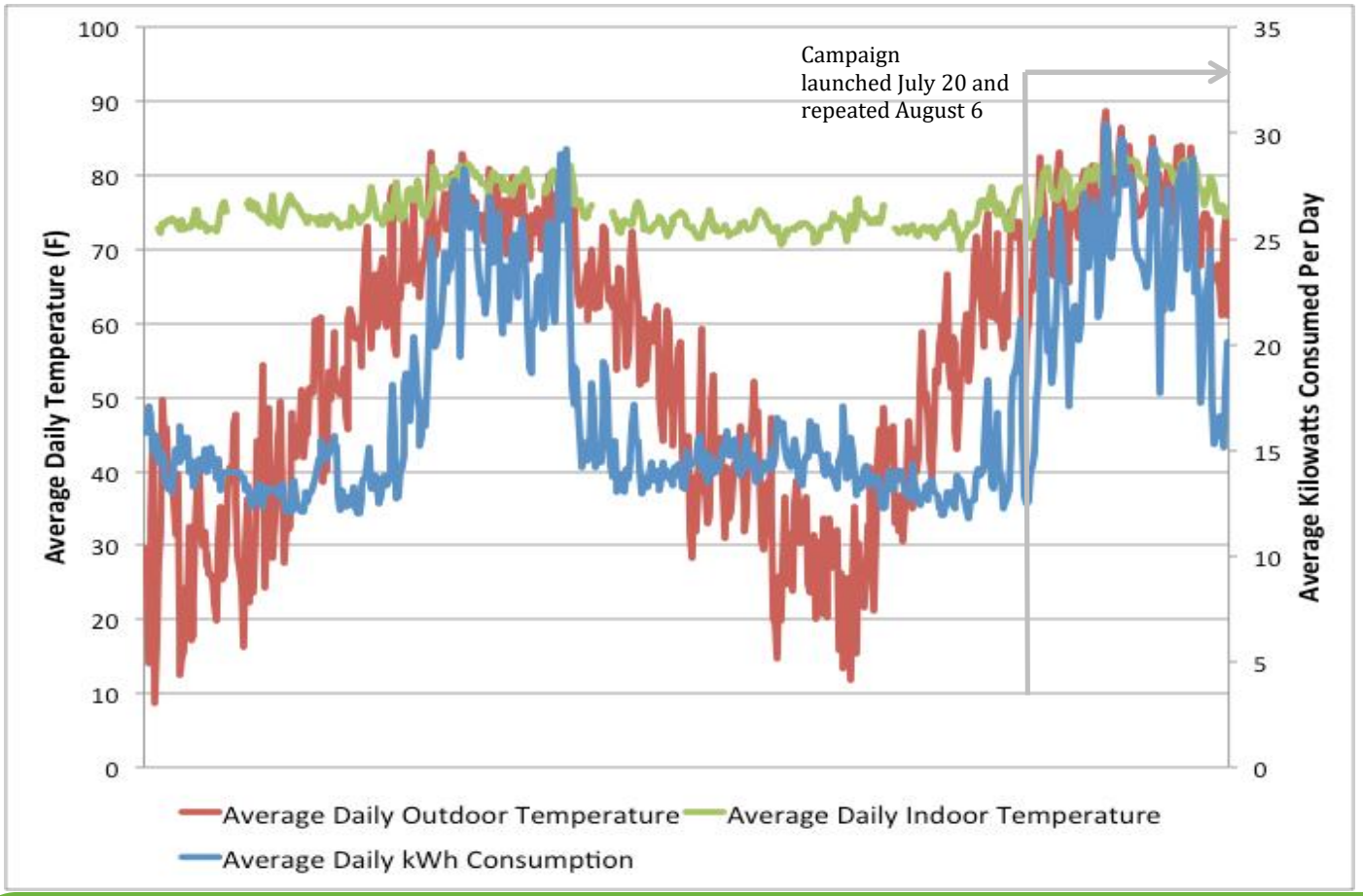
- ☑ Keep drapes and blinds closed to block out direct sunlight and keep HEAT out
- ☑ Keep windows closed and HEAT out, except when it is cooler than 76⁰ F outside
- ☑ Keep your apartment between 76⁰ - 78⁰ F and use fans to stay COOL
- ☑ Keep AC turned OFF when no people or pets are home

Thank you for being the change we want for people we care about!

Learn more about asthma and how to take care of children with asthma: http://www.asthma.com/for-parents.html 1

Results

- Average daily electricity consumption over time, with outdoor temperature and indoor temperature overlaid



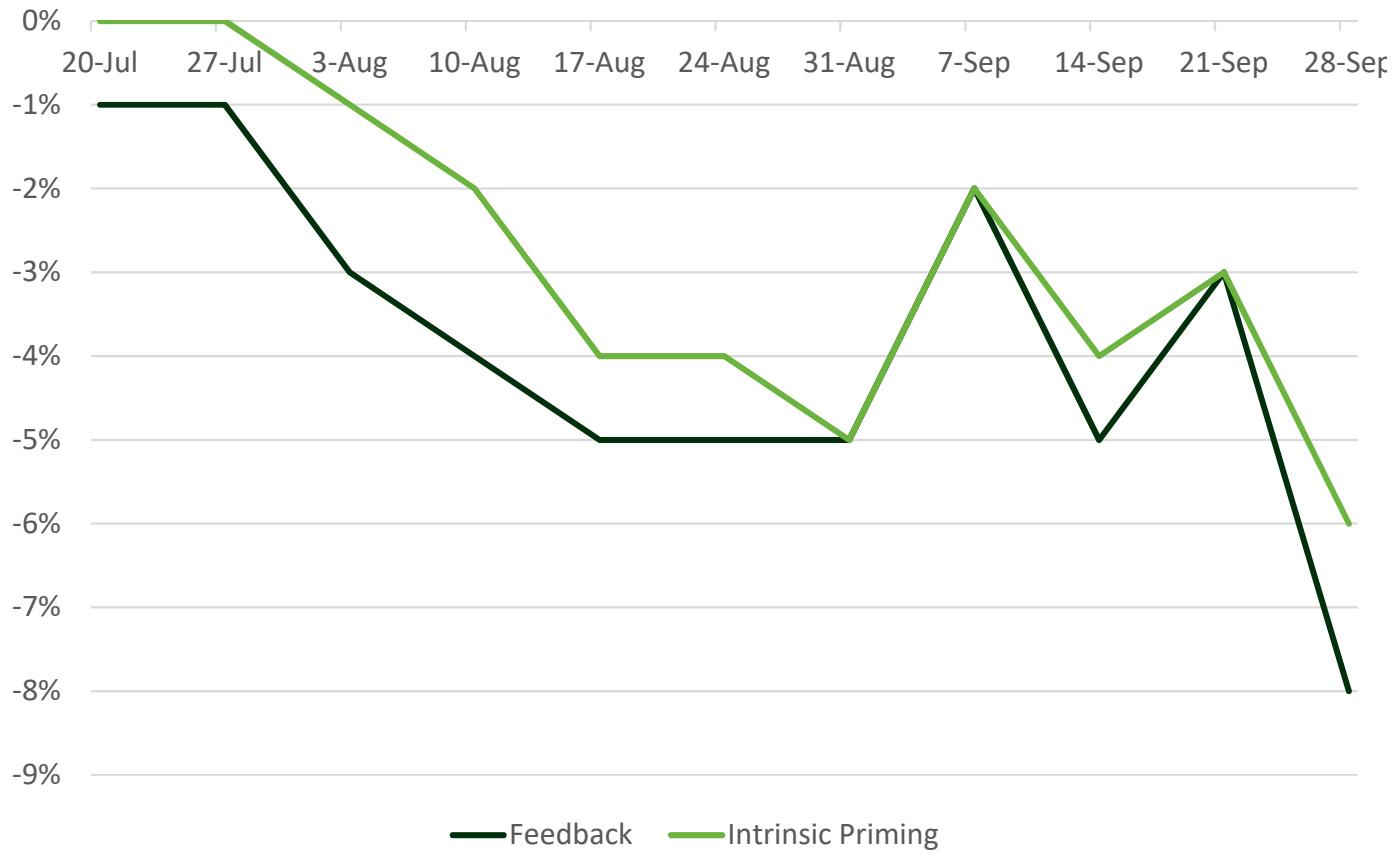
Results

- Average daily electricity consumption over time

Note: The figure shows the results from the repeated measures ANOVA.
The 95% error bars are shown for the control condition.

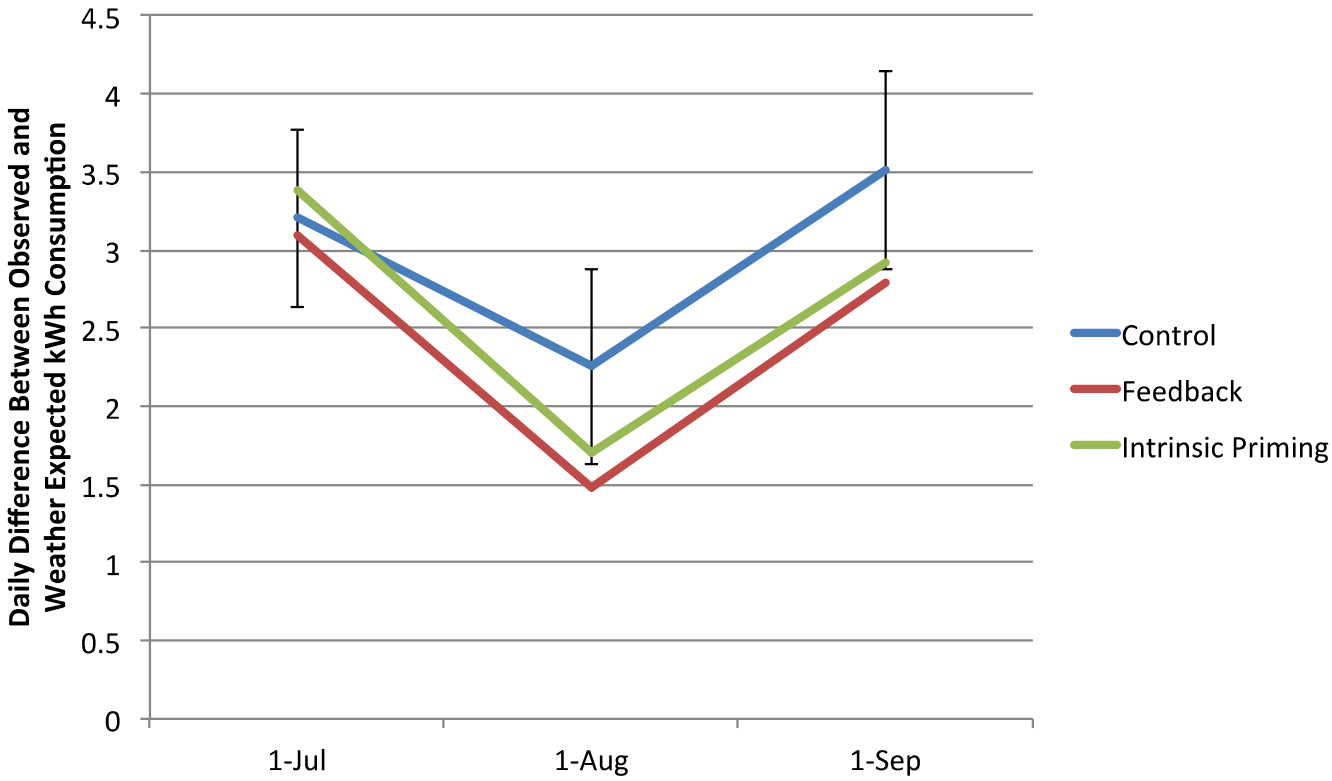
Results

- Percentage difference each week for the two treatment conditions, compared to the control



Results

- Difference between observed and weather-adjusted expected monthly average daily electricity consumption



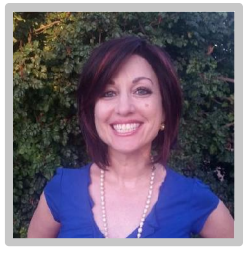
Note: The 95% error bars are shown for the control condition.

Conclusions

- Effective non-monetary intervention
- Both effective strategies
  - 3-5% savings
  - High and low users
  - Large and small apartments
- 2 month persistence
- 2nd outreach (including new posters) strengthened effect
- Intrinsic Prime has no significant difference in energy savings
  - Not tested alone, so cannot determine effectiveness

sparking behavior changes for good





Kaitlin Phelps: phelps@actionresearch-inc.com

3630 Ocean Ranch Blvd., Oceanside, California 92056

13 East 37th St., Suite 7F, New York, New York 10016

www.actionresearch-inc.com

NYSERDA Contact

Marsha Walton: marsha.walton@nyserda.ny.gov

action RESEARCH