

**PECI**<sup>®</sup>



# **PECI Kilowatt Cup: Experimenting with Behavior Change in Our Own Living Lab**



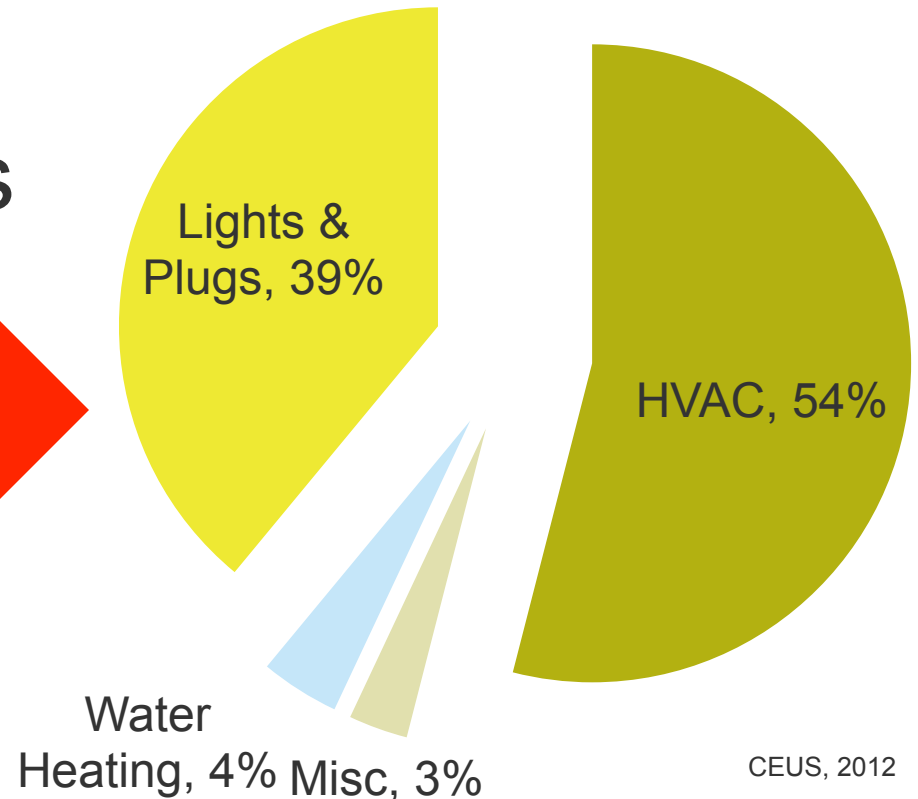
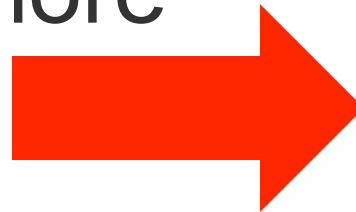
***The possibility of change  
depends on the existence  
of people who have the  
power to change.***

– Wendell Berry

# What we know for certain

Buildings are becoming more efficient every day.

The human side is becoming more important.



CEUS, 2012



# What we don't really know

What inspires people to create new energy-saving habits?

Under what circumstances do these techniques work most effectively?

# PECl's living lab

## Our Office



+

## Our People



=

**The ideal environment to test what will drive energy-saving behaviors**

# Our Experiments



# Goal

## *Kilowatt Cup 2012*

Use an office competition to educate, save energy and motivate persistent behavior change.

# The set up

- Who** Three office floors of PECEI staff (Portland)
- What** Compete to reduce plug load energy use
- When** Two weeks in 2012
- How**
- Announce
  - Educate
  - Communicate
  - Monitor
- Prize** Trophy and bragging rights

Kilowatt Cup 2012







# Results

**86%**

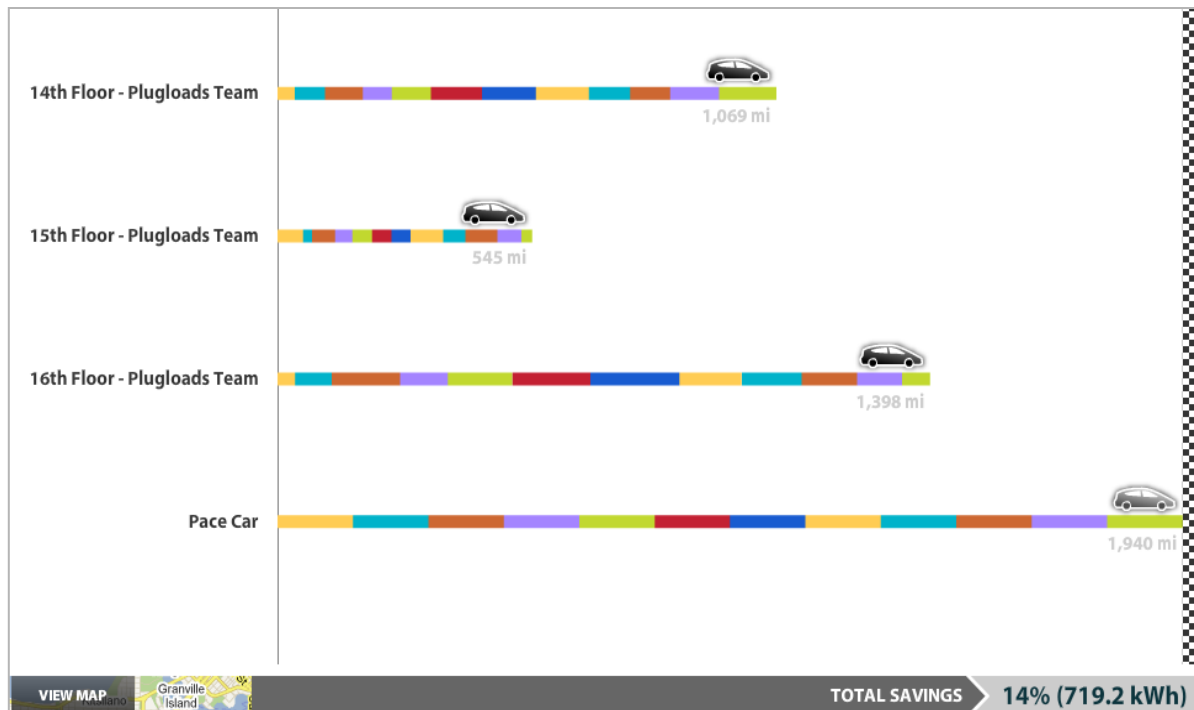
participation

**14%**

plug load reduction  
(719 kWh)

**4%**

total  
energy reduction





# Results

Education and  
friendly competition  
**CAN** create immediate  
energy savings



**Did the savings persist?**

**Maybe?**



# Goal

## *Kilowatt Cup 2013*

**Lasting behavior  
change**



# The new set up

**Who** Three office floors of PECl staff

**What** Compete to reduce plug load ~~energy use~~ & lighting load

**When** ~~Two weeks in 2012~~ One month in 2013

**How**

- Announce
- Educate
- Communicate
- Monitor

**plus**

- Champions
- Creativity, Humor

**Prize** Trophy and bragging rights



# Results

**7%**

total energy  
reduction

**4x**

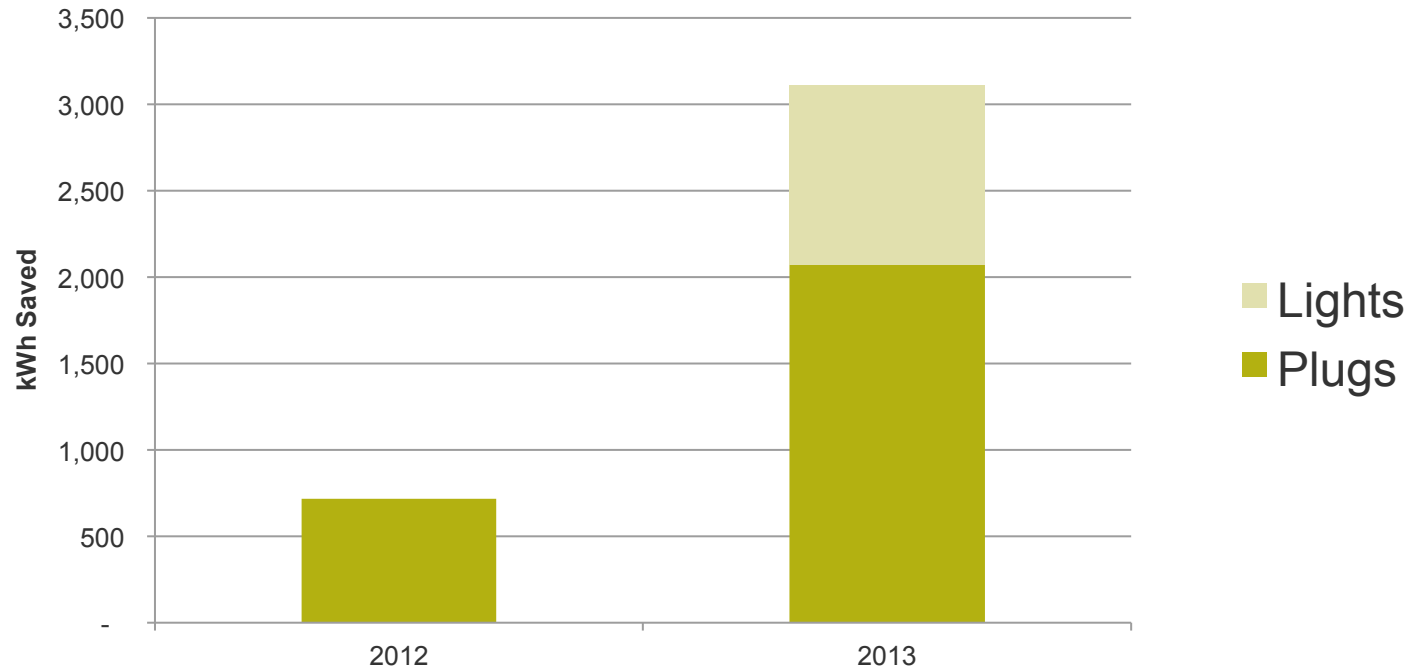
the savings compared  
to 2012

**3,100**

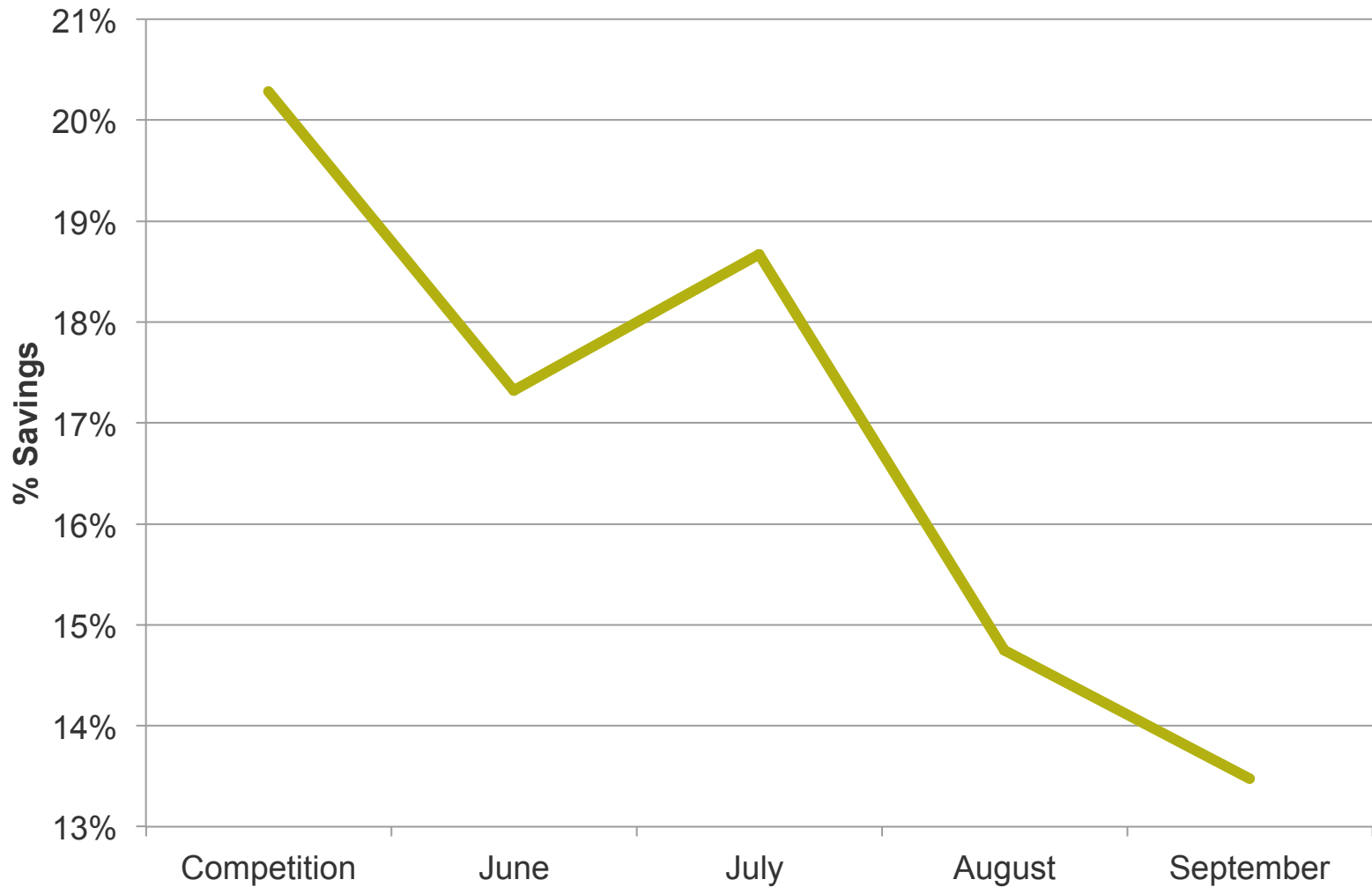
kWh savings

**20%**

plug load and  
lighting reduction



# Persistent Savings?

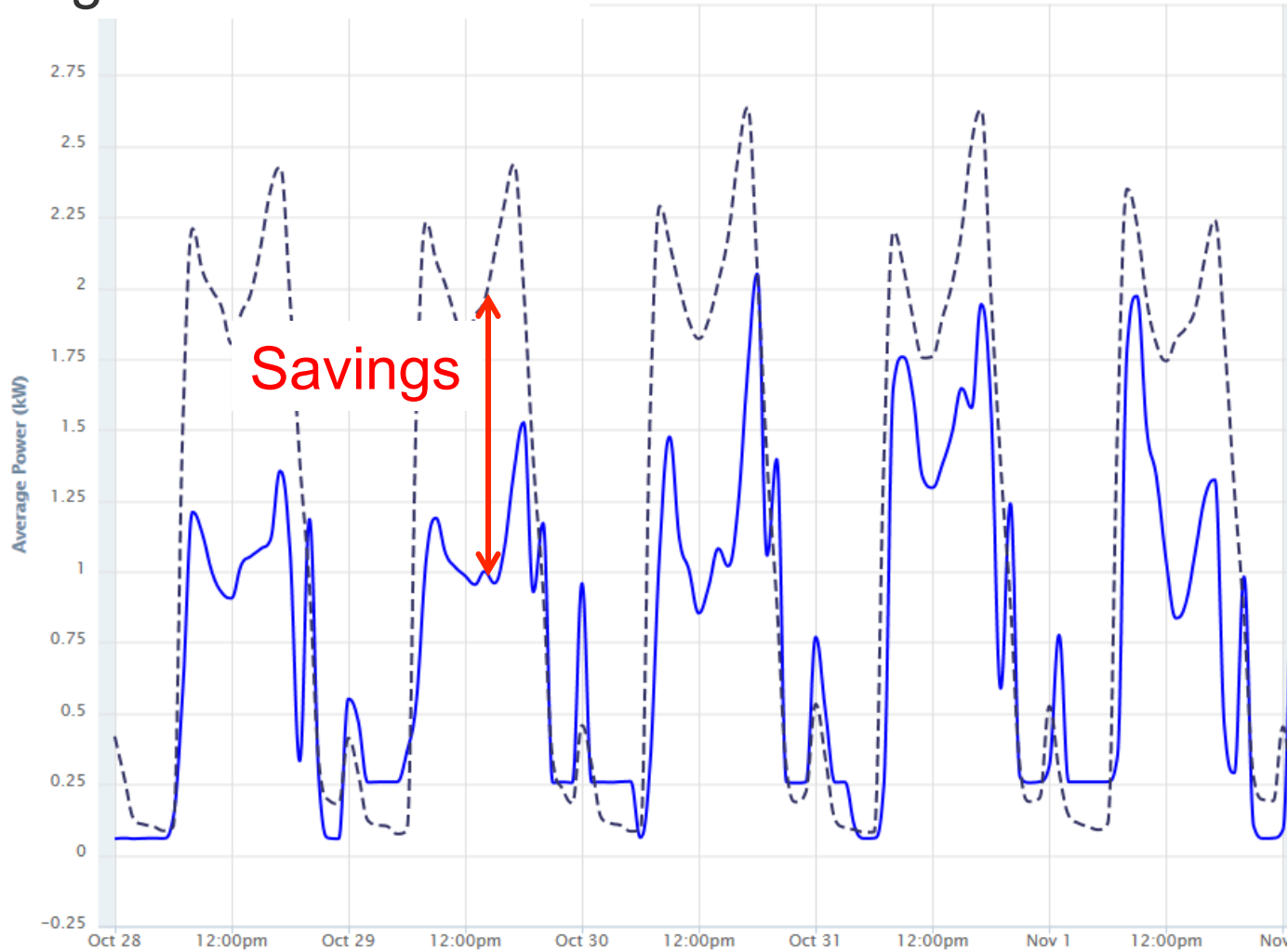


**What can we automate,  
without negatively  
affecting the comfort of  
PECI employees?**



# Future Experiments

Lights: Manual On





# Future Experiments

- ✓ Revise occupancy controlled plug strip set-up
- ✓ Employ a company-wide power management strategy
- ✓ Update content of new-hire orientation materials



# The Lesson

Experimenting will reveal ways to combine behavior change *and* automation to create persistent savings without sacrificing comfort.



***The possibility of change  
depends on the existence of  
people who have the power to  
change ...***

– Wendell Berry

***...and the willingness to  
experiment to make the right  
choice easy.***

– PECCI



**PECCI**<sup>®</sup>

**Thanks for your time.**

# Backup



# 2013 Results

## **Floor 3: 1<sup>st</sup> Place** (2nd in 2012)

- Humorous emails
- FAQ's and instructions

## **Floor 1: 2<sup>nd</sup> Place** (1st in 2012)

- Happy face/sad face stickers
- Bagels and encouragement

## **Floor 2: 3<sup>rd</sup> Place** (3rd in 2012)

- Pledge cards
- Treats and reminders

# What we learned



- Balance of carrots and sticks
- Simple tasks increase engagement
- Humor, camaraderie, tactical requests stave off fatigue
- Survey results implied more change
- Follow-up steps encourage persistence
  - Quarterly emails with to-date energy performance
  - Training in new hire orientation



- Falling far behind creates apathy
- So does a big lead





# Lessons To-Go

- Make it as easy as possible
- Promote peer leadership
- Recognize and reward success
- Allow for organic, creative peer-level developments
- Use data to help people see their actions in action
- Avoid message fatigue with camaraderie and humor
- Pick techniques that resonate, try them, and iterate
- Don't force techniques people don't respond to
- Maintain engagement after event
- Automate everything you can without sacrificing comfort
- Experimenting will reveal ways to combine behavior change and automation that create persistent savings without sacrificing comfort



# How to run your own Kilowatt Cup

[http://www.peci.org/sites/default/files/be-energy-hero-deck\\_0.pdf](http://www.peci.org/sites/default/files/be-energy-hero-deck_0.pdf)