



# *TEP Power Partners Project*

## *Behavior Change through Direct Load Control*

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April 30, 2013

# Overview

- Project objectives
- Implementation
- Hypotheses of interest
- Treatment group and Implementation
- Results
- Other benefits
- Q & A



# Project Objectives

- Effectiveness of a new generation of technology
- Assess program & customer experience
- Load Impact
  - Goal: 1.0 kW



# Project Details

- TEP Power Partners Project
- 800 residential participants
- Opt-in, 2-year project



Managing your  
monthly energy bill  
just got easier.

TENDRIL  
The Power is Yours



The TEP  
Power Partners Project  
puts the power  
in your hands.



Sign up now and  
receive a free home energy-  
management system  
valued at up to \$1,000, plus  
\$50 for your participation!

Tucson Electric Power is partnering with Tendril, a leader in energy-management software and hardware, to create the TEP Power Partners Project, an initiative that will help you manage your energy usage. We'd like you to join us!

The TEP Power Partners Project is a pilot program that will only be offered to 800 residential customers. This two-year project is designed to help participants better manage their energy usage and help TEP learn ways to improve how electricity is delivered and used throughout our community.

#### Here's how it works.

We will install a state-of-the-art home energy-management system in your home that will let you see your energy usage in near real time. This will help you make informed decisions that can result in real savings on your monthly bill.

#### Receive \$50 from us for participating.

Be one of the first to take advantage of this exciting new program, and you'll not only receive a free home energy-management system valued at up to \$1,000, but you will also get \$50 from TEP for completing the program!

Put the power in your hands. Start managing your energy usage and make a difference.

APPLY NOW!



# Implementation



Web Portal



Translate



Transport



SetPoint TSTAT



In Home Display



Load Control Switch

# Hypotheses of Interest

- Customers with Load Control Switches (LCS) will shift energy from Peak to Off Peak
- Customers with Smart Thermostats (PCT) will shift energy from Peak to Off Peak
- Longer events yield less shift per hour
- LCS with higher utilization rates will yield higher savings
- PCTs with higher temperature increases will yield higher savings

# Treatment Group & Implementation

## Treatment Group

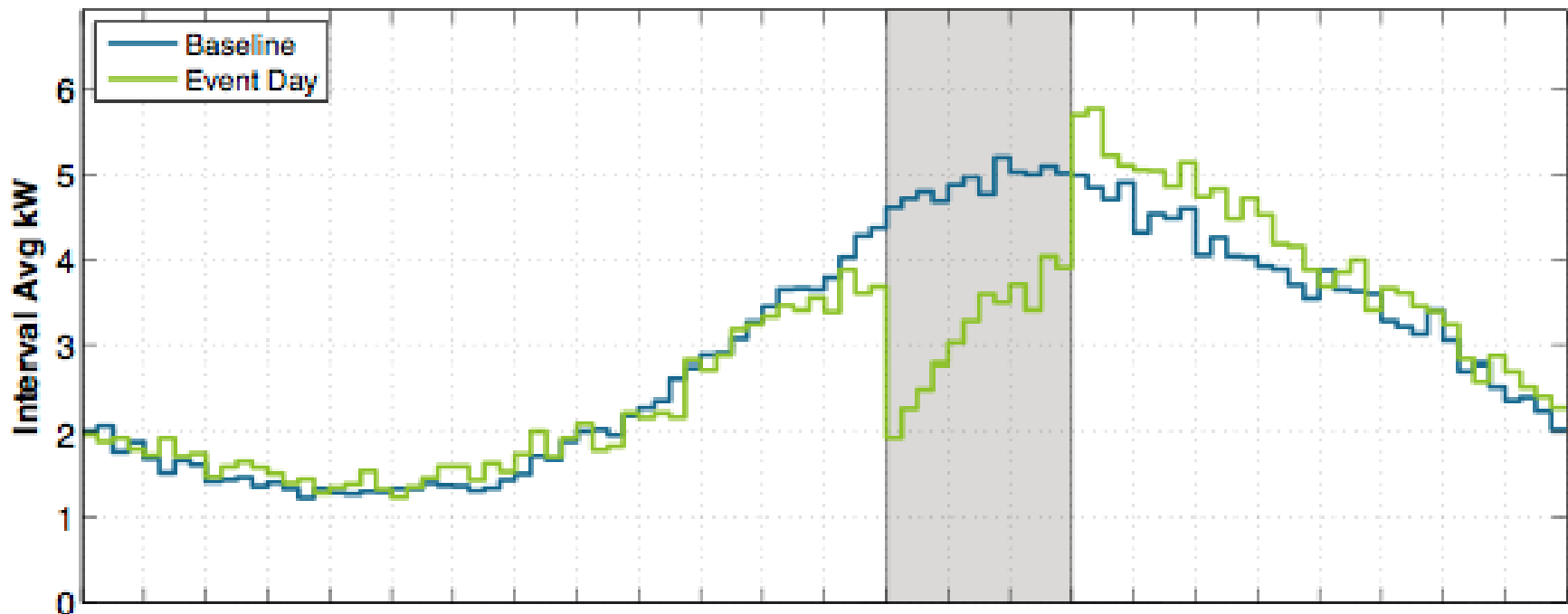
- 3 LCS groups of ~50
- 3 PCT groups of ~170
- 1226 Sample Size
- Incentivized

## Implementation

- 8 events
- Outside temp, greater than 90° F
- Duty Cycle LCS – 50% or 75%
- PCT Offset - 2° or 3°F

# Results: Customers with PCTs and LCSs shift energy from Peak to Off-Peak

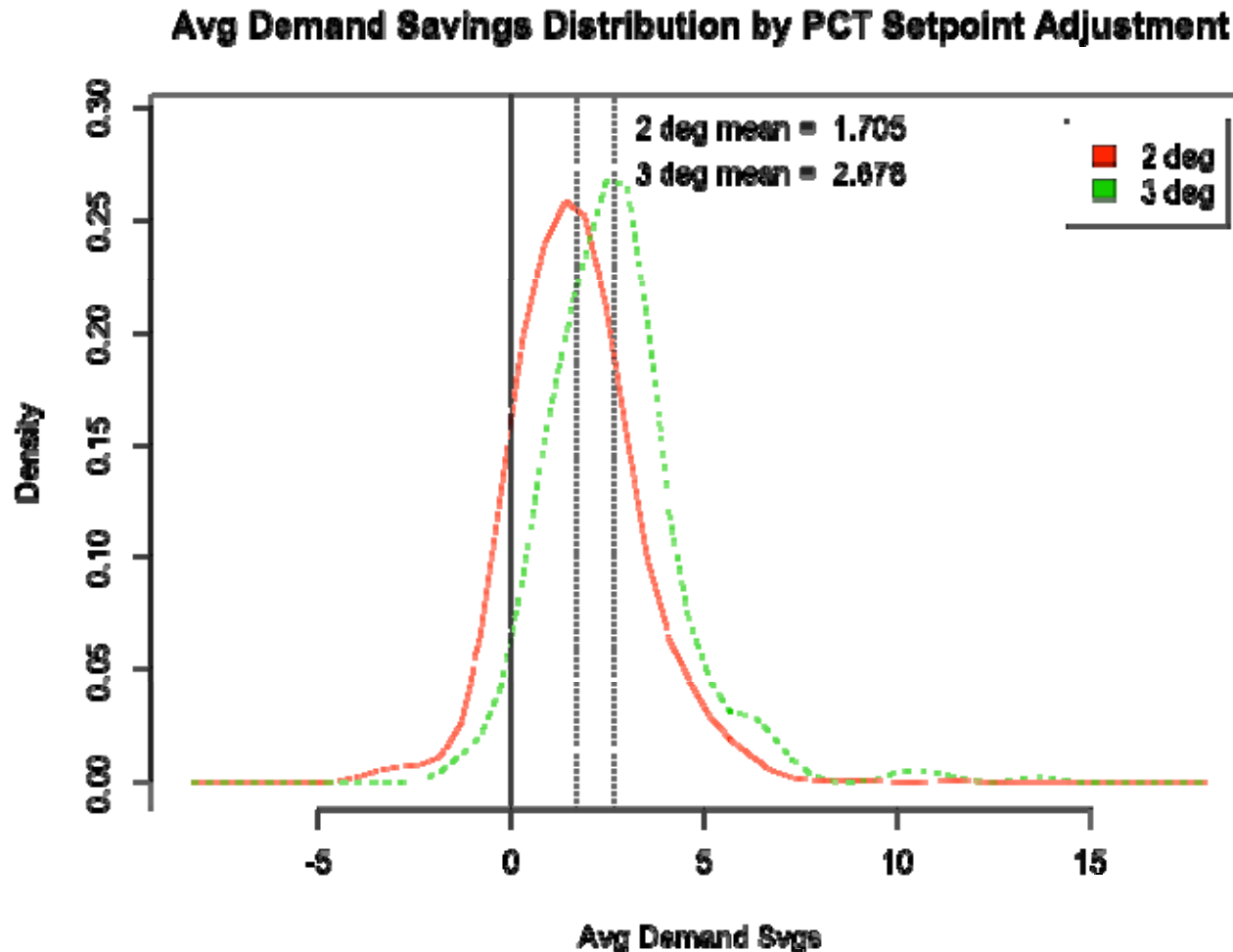
Event 28 : 2012-06-28 : 86 Networks Reported



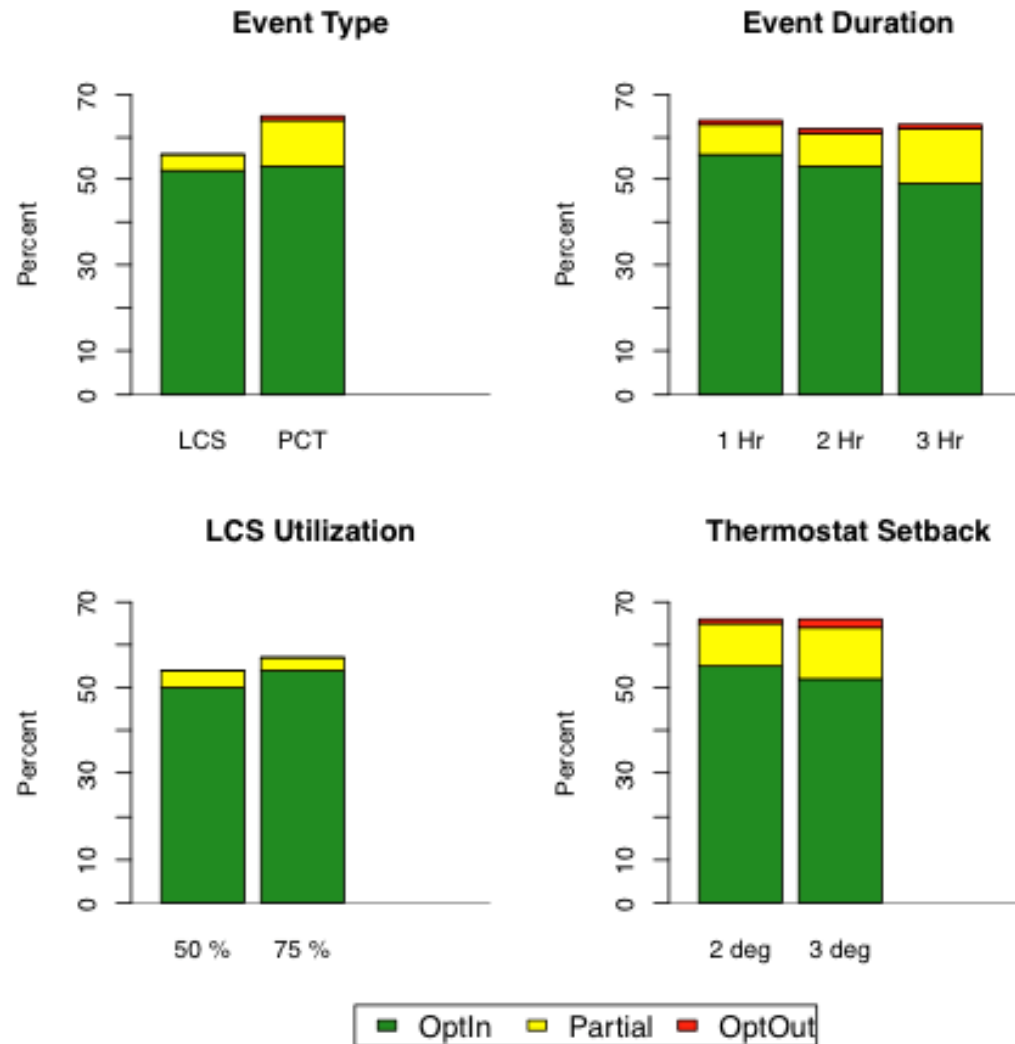
- 2.25 kW average demand reduction, homes with TSTATs
- 2.39 kW average demand reduction, homes with LCSs



# Results: PCTs with higher temperature increases will yield higher savings



# Results: Participation



- 73% of households opted-in

# Results: Hypotheses of Interest

- ✓ Customers with Load Control Switches (LCS) will shift energy from Peak to Off Peak
- ✓ Customers with Smart Thermostats (PCT) will shift energy from Peak to Off Peak
- ✗ Longer events yield less shift per hour
- ✗ LCS with higher utilization rates will yield higher savings
- ✓ PCTs with higher temperature increases will yield higher savings

# Results: Customer Satisfaction

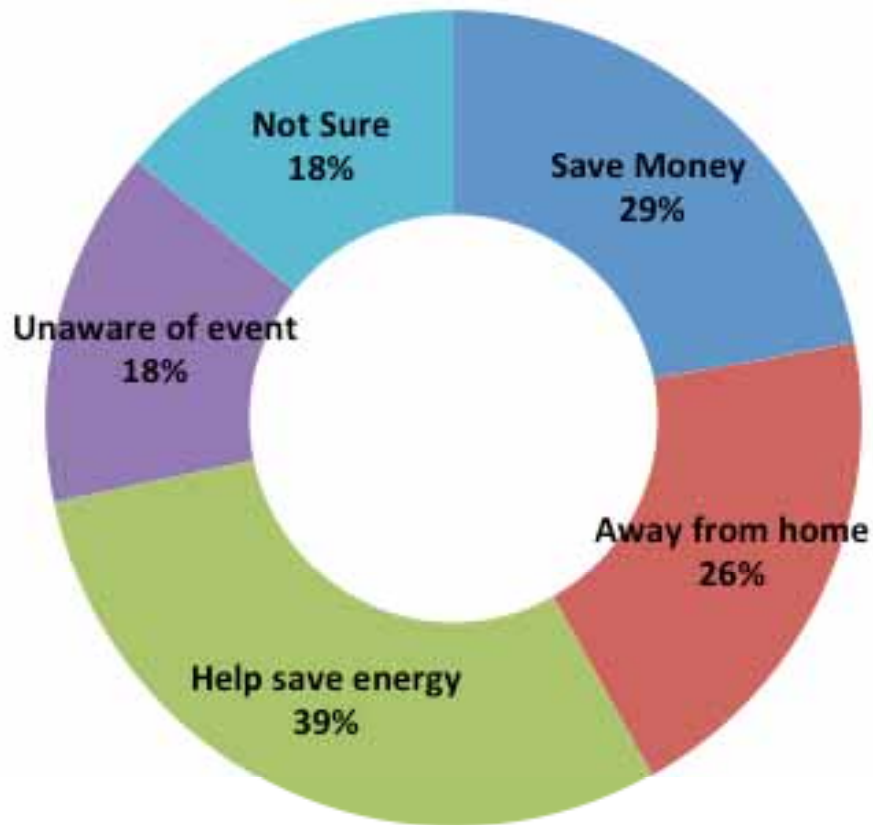
How satisfied were you with the overall event experience?



*Based on 287 respondents*

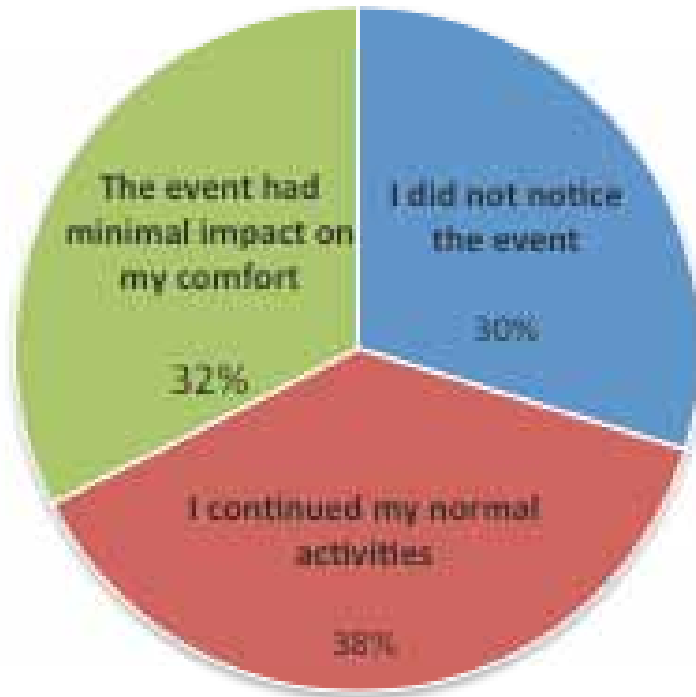
# Results: Customer Satisfaction

**Why did you decide to allow the event to occur?**



*Based on 260 respondents*

# Results: Customer Satisfaction



Based on 271 respondents

**“I feel good about helping my community balance power draws during our extremely hot days.”**

*TEP Customer*

# Other Benefits

- **Energy Awareness**
  - 2.35% reduction
  - Positive impact of consumer engagement around energy
- **Customer Sat**
  - 54% liked trying new technology
  - 31% logged into Portal 1x/week and 31% 1x/month



## Save the Dates

Sept. 30-Oct. 2, 2013

AESP's Fall Conference  
Seattle, WA

Jan. 27-30, 2014

AESP's National Conference  
San Diego, CA

May 12-14, 2014

AESP's Spring Conference  
Baltimore, MD

For more information - [www.aesp.org](http://www.aesp.org)

