

# Innovative Behavior Based Energy Efficiency Pilot

Home Energy Reporting + Advanced Digital Feedback  
and Communication Campaign

Eugene Rosolie



May 8, 2012



# Why this Program?

- I-937
- Consistent savings
- Low cost savings
- Ability to touch hard to reach markets
- Positive customer experience with smart grid
- Learning Opportunity
- Positive image for Cowlitz PUD locally and regionally

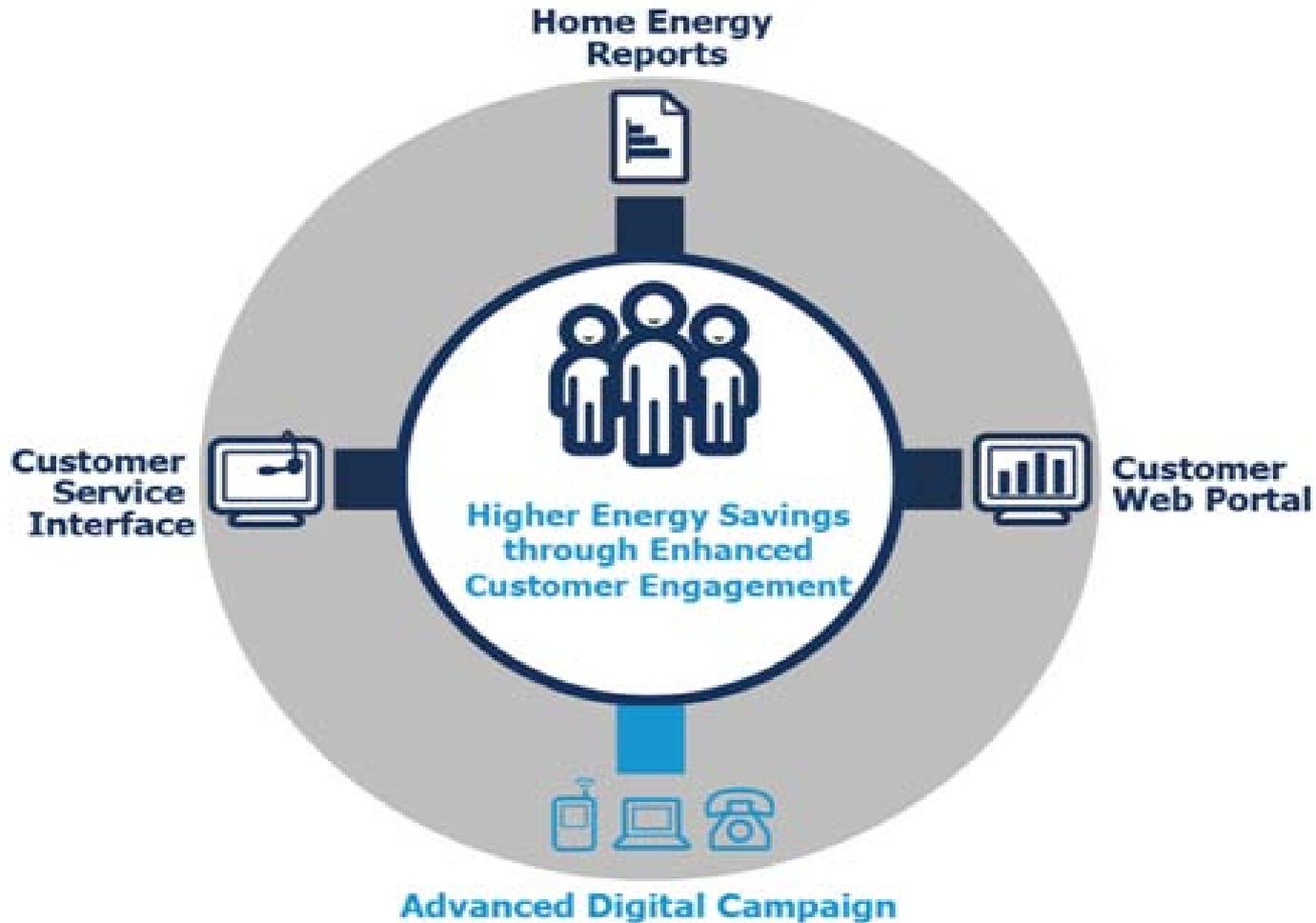
# Pilot Program Goals

- ✓ Scientifically measure the incremental value of an Advanced Digital Campaign in delivering energy savings through the Home Energy Report (HER) Program
- ✓ Help Cowlitz PUD provide its residential end-users with an energy saving, and cost-saving Behavior Based Energy Efficiency (BBEE) program that has been proven to help utility customers save energy and save money
- ✓ Identify best practices that will enhance future HER Program deployments across the Pacific Northwest

# Pilot Program Partnership

- BPA
  - Provide oversight through weekly conference call updates, receipt of quarterly reports, and Measurement & Verification (M&V)
- Opower
  - Vendor providing platform including marketing, reports, alerts, M&V, etc.
- Cowlitz
  - Providing up to 25,000 customers and data, oversight on marketing and other program material

# Innovation in Energy Efficiency



# Digital Communication Channels

**COWLITZ COUNTY**

BOB SMITH - Acct. No. \*\*\*\*\*7890

We are pleased to provide you with this personalized report for Aug 1 - Aug 31. Additional information is also [available online](#).

**You used less energy than average, but 47% more than your efficient neighbors.**

Category	Value
Efficient Neighbors	181*
You	473
All Neighbors	692

Great 😊 😊  
 > Good 😊  
 More than average

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

Sign in to see how your usage changes over time.

[Explore my energy use >](#)

Unsubscribe from these reports.  
 UtilityCo  
 1515 N Courthouse Road, Suite 610  
 Arlington, VA 22201

runs on OPOWER®  
 Copyright 2011 OPOWER. All rights reserved.

You're receiving this alert to help you keep your bills low. [Unsubscribe](#)

**COWLITZ COUNTY** Acc # \*\*\*\*\*5678

**Unusual electric usage**

Period	Amount
Last 8 days May 22 - 29	<b>\$58</b> <small>See your use each day</small>
Your projected bill May 22 - Jun 20	<b>\$175*</b> <small>Your typical June bill: \$135</small>

You're headed towards a bill that is 30% higher than what you normally spend this time of year. You're receiving this alert to help you minimize your next bill.

Steps to take	Impact
Turn off unused lights & devices	
Clean or replace air filters monthly	
Adjust your thermostat 3-5 °	

[See more ways to save](#)

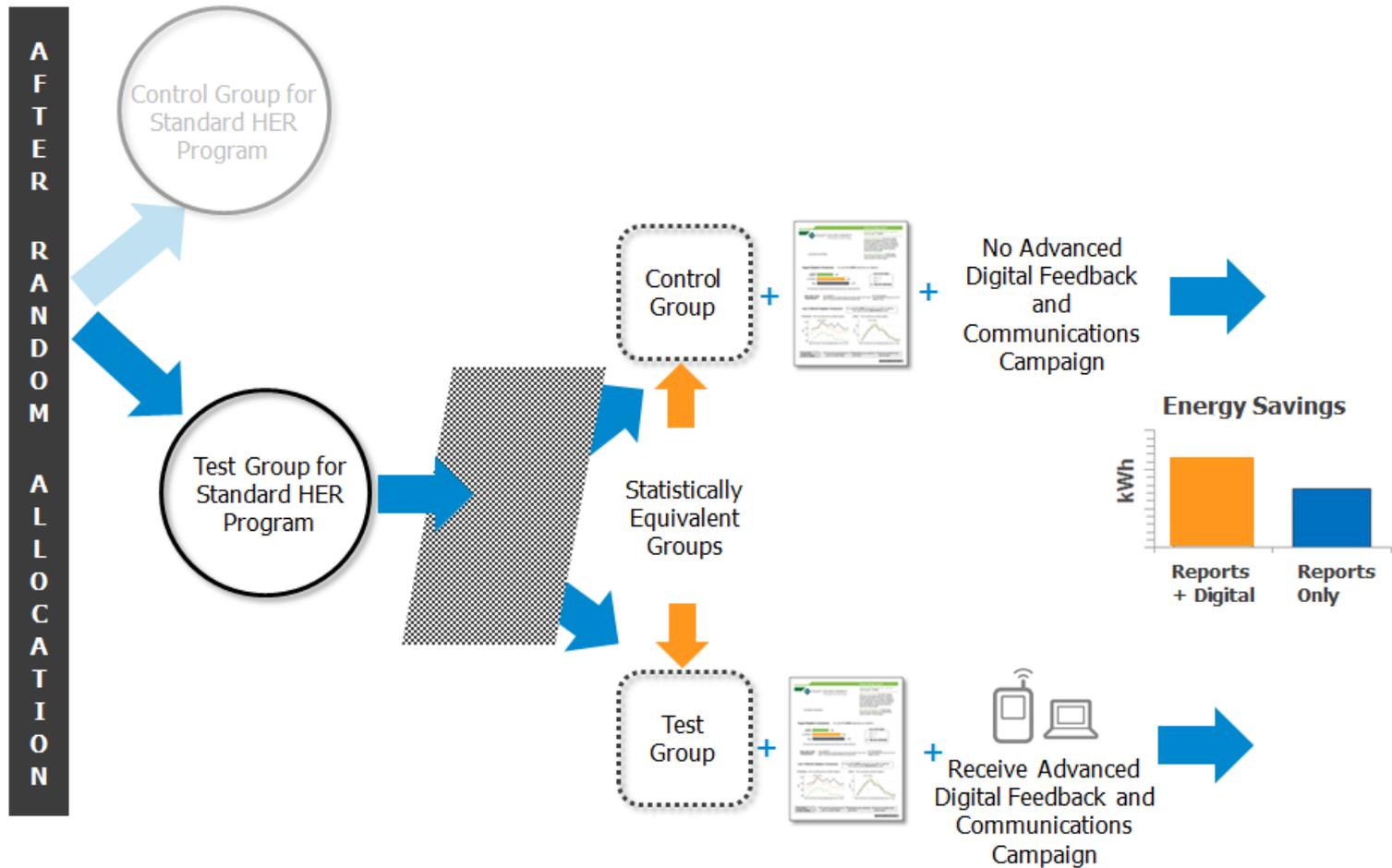
\* Actual bill will vary based on usage, taxes, & fees

Was this helpful?

[Change your alert preferences](#)



# Program Measurement and Verification



# Estimated Program Impact

(Assumes Participation of 25,000)

	Year 1	Year 2	Year 3	Total
MWh saved	8,825	13,498	13,420	<b>35,743</b>
kWh saved / HH	353	540	537	<b>477</b>
Savings Rate	1.57%	2.40%	2.38%	<b>2.12%</b>
Cost/kWh saved	\$ 0.030	\$ 0.020	\$ 0.020	<b>\$ 0.024</b>

# Questions?



# Behavioral Based Energy Efficiency: Home Energy Reports, Web Portal and Social Media Pilot

BPA Energy Efficiency Summit

Concurrent Panel: Session 2

Can we change Behavior? Innovation in the Region

May 8, 2012

Presented by Larry Blaufus

Senior manager of Energy Technologies & Services



# Why a Social Media Pilot?

- Clark Public Utilities has already established an online social community using Facebook—with plans to extend that presence to Twitter and YouTube in 2012.
- Through this project, Clark Public Utilities seeks to leverage and focus its burgeoning social presence and measurably increase energy savings through behavioral science and normative comparisons between customers.
- OPOWER, Facebook, & the Natural Resources Defense Council Team Up on a new Energy Efficiency Application



# What will the experience be like for customers? And what are Clark's expected/desired outcomes?

- Behavioral Based Energy Efficiency with social media will be a new customer engagement platform for Clark and the utility industry.
- Reinvents the way Clark interacts with customers—from the quality of the information provided to the way it's presented & delivered.
- Improves the overall customer experience by making energy use personally relevant.
- Energy-efficiency recommendations are targeted based on customers' specific household characteristics (e.g., size of house)
- Helps customers understand how participating in other energy-efficiency programs could help them save energy and money
- Enables customers to compare their bills with neighbors, with their own past bills, and set energy-saving goals with progress updates
- Outcomes...increase residential savings by ~ one aMW and customer satisfaction ratings improve three to seven percent.



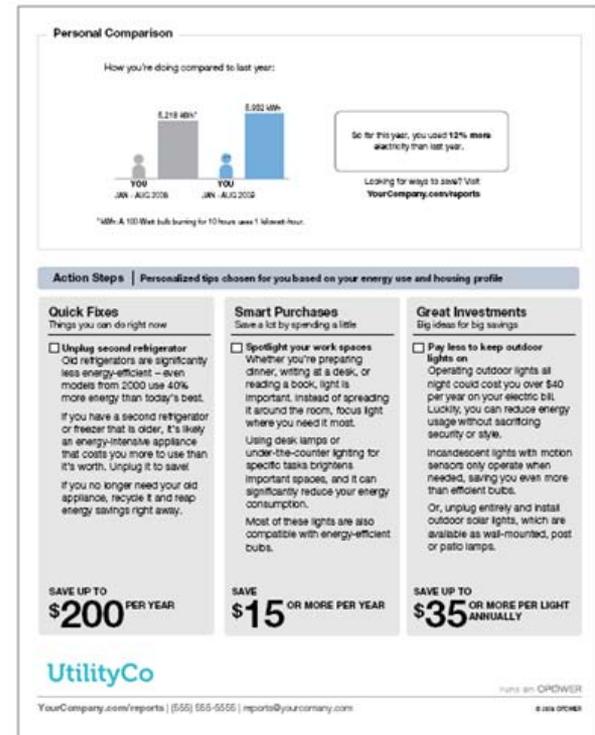
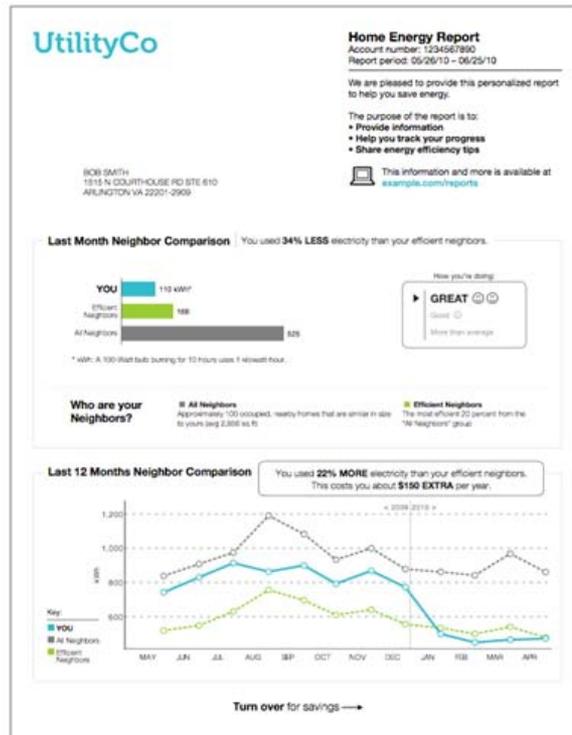
Washington Initiative 937



# OPower Home Energy Reports

Opower is probably best known for pioneering the Home Energy Report. One way to think of it is as a more interesting presentation of the customers electric bill. More than 3 million homes receive Opower reports today, and they're on track to save hundreds of millions of dollars on their energy bills.

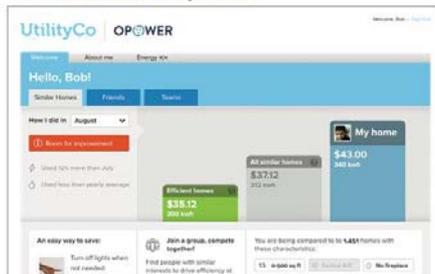
\* We will be trying to change the behavior of 20,000 Clark Customers who will receive home energy reports bimonthly... seven reports during the first year...one every other month in years 2 & 3.



# BPA Pilot Home Energy Reporting Program + Social Energy (Energy Efficiency Social Networking)

Compare their energy use to a group of their choosing—either friends or a national average of similar homes—helping customers benchmark their usage against friends, communities, peers and fostering a healthy competition

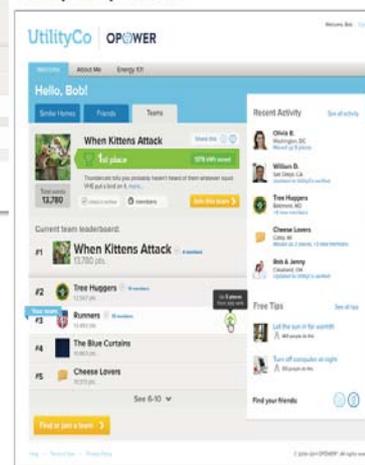
Similar Home Comparison



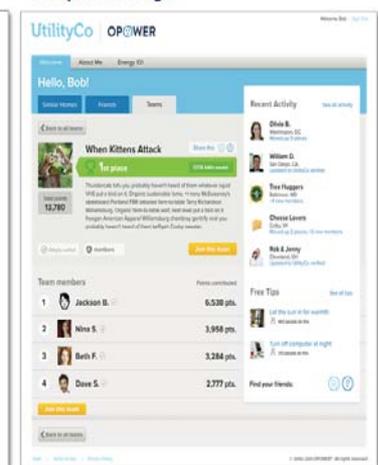
Friend Comparison



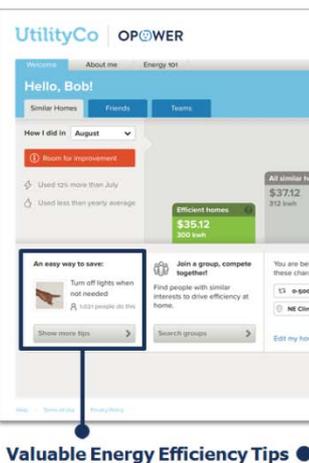
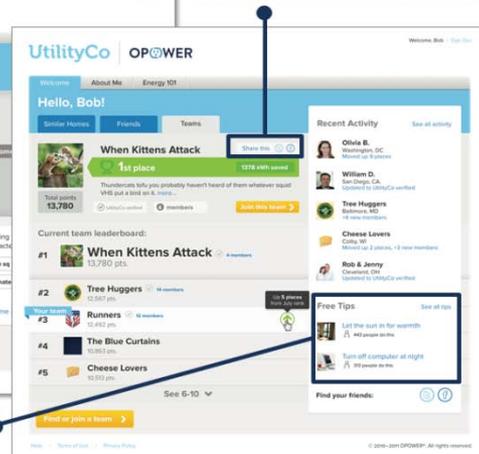
Group Competitions



Group Profile Page



Social Communication Platform



# Facebook, Web Portal & Facebook App Offer Customers an Interactive Deep Dive into Energy Consumption



UtilityCo

Welcome, Bob - Account Settings - Sign Out

Bob, 2513 Cedar St  
About my Home

Dashboard My Energy Use My Plan Ideas & Advice

Welcome

Set a goal

Join your neighbors in setting a goal to reduce your energy use each month. We'll help you meet your goal and track your progress. Customers who set goals are more likely to use less energy.

on track

Latest Bill (5/31)

\$111.72

\$16.36 more than previous bill

Compare my bills

Recent community actions:

A customer in added **Improve insulation** to their plan.

A customer in added **Turn off lights when not needed** to their plan.

A customer in added **Choose an efficient water heater** to their plan.

How you're doing: May 1 - 31

You used more electricity than your efficient neighbors.

Hours	598 kWh
Neighbors	811 kWh
Hours	931 kWh

Great 😊  
Good 😊  
More than average

Explore my usage

Are my neighbors? | Based on a 2710 sq. ft house. change?

Your last bill period, about 33% of your electricity use went to cooling.

AC	33% (\$36)
Other	68% (\$76)

Based on your profile:

One refrigerator, central air conditioning, a clothes dryer, a dishwasher, and an electric water heater.

Update Your Home Info

Your insights

when you use the most

You're on track!

Have you completed any tips in your plan?

Facebook social energy app

OPower

Wayne L. 0.8 kWh/Day

Dave C. 1.7 kWh/Day

Deena R. 2.4 kWh/Day

Adam H. 3.6 kWh/Day

Me 5.2 kWh/Day

11th place

Connect to more friends

OPower

February

You are being compared to 5,000 homes in your region.

503 kWh

126 kWh

233 kWh

Efficient homes

Share on Facebook

facebook

Home Profile Friends Inbox

News Feed Events Requests (1)

Alli Hsieh is singing the 20th century FOX song.

Jen Tailion added new photos.

Dana Hornbeak removed "piano" from her interests.

Dave McClure posted a video.

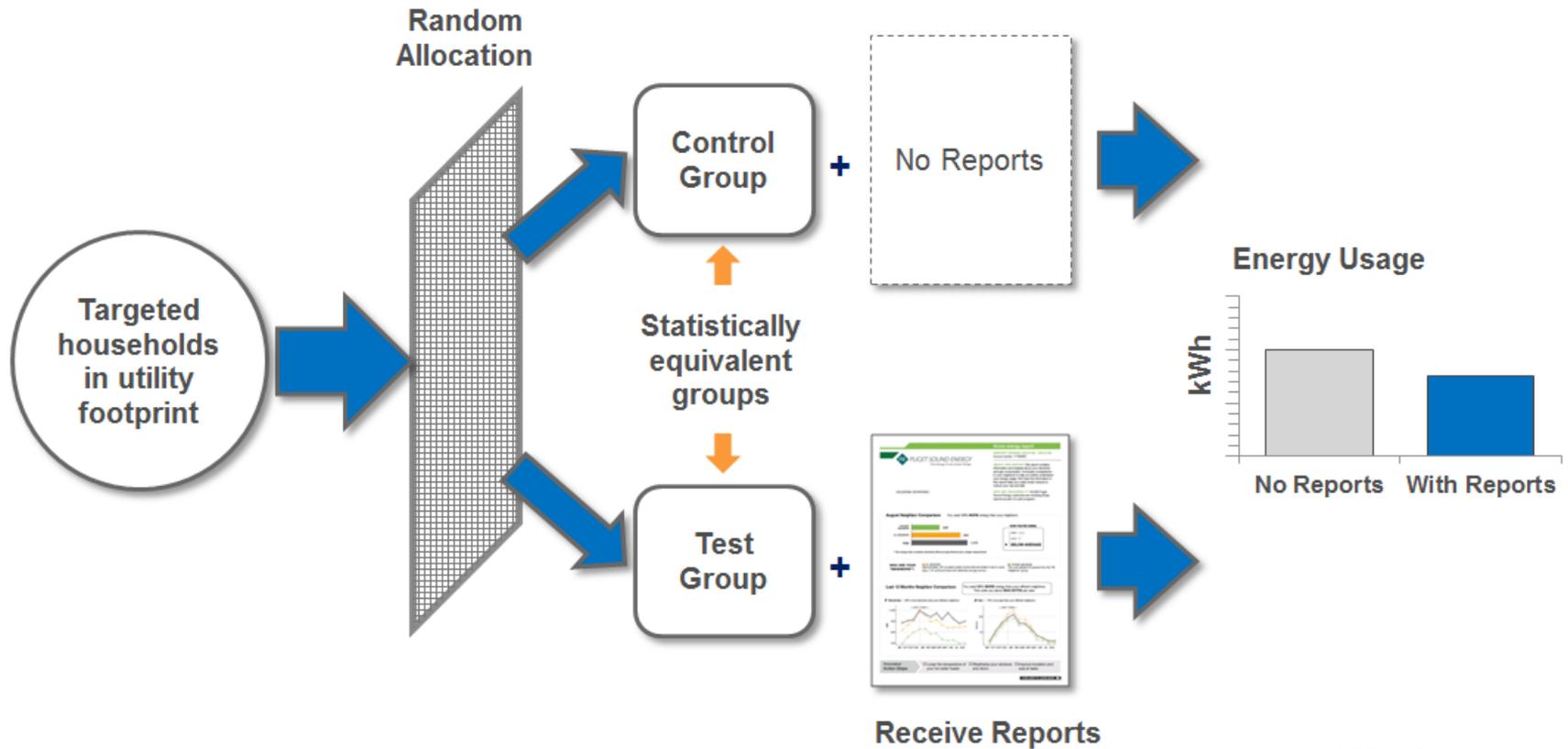
Toronto Garage

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Facebook presentation by meagan marks @ Toronto FB Dev Garage. Interesting stats & metrics info, worth checking out.



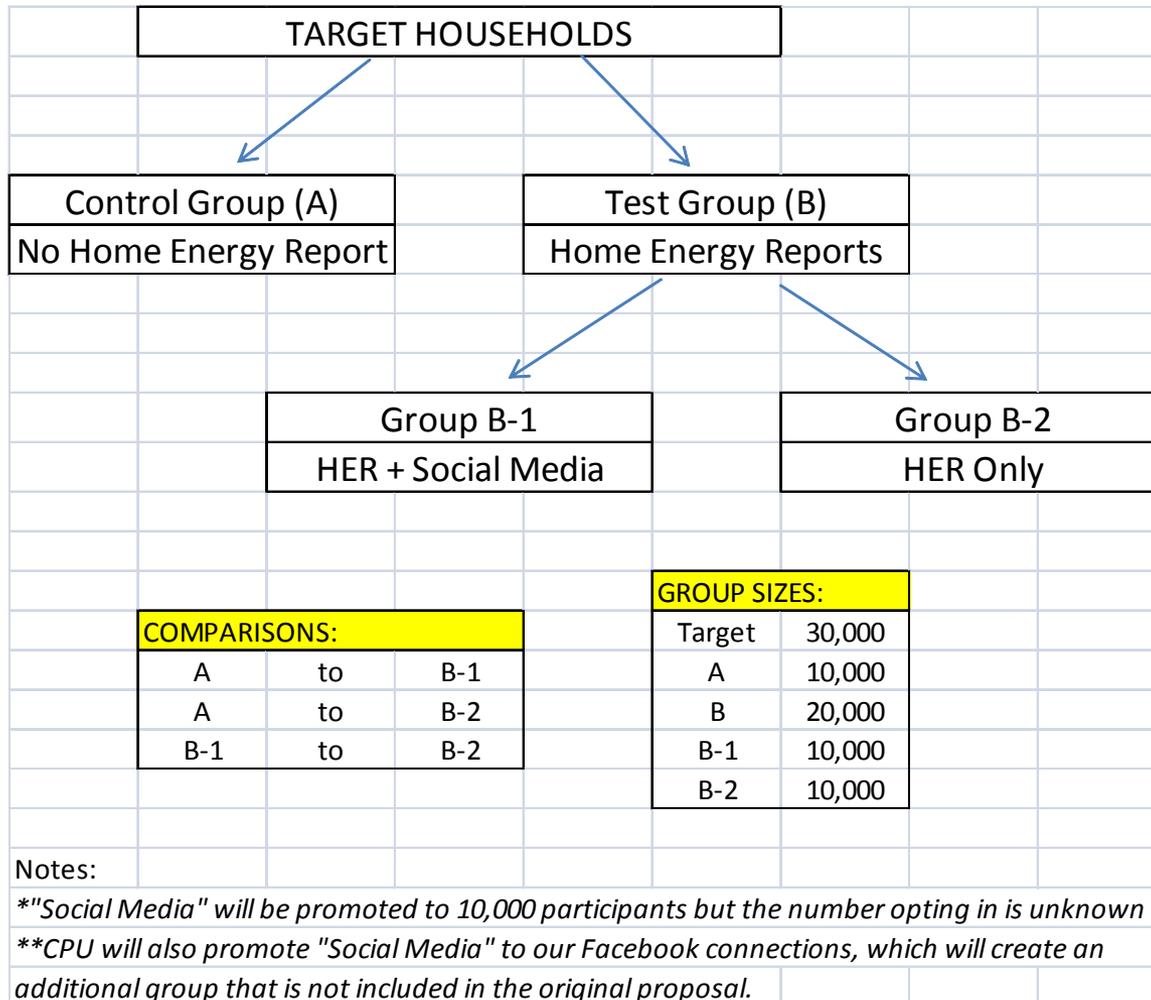
# How is the energy savings calculated?



# BPA, CPU & OPOWER BBEE Pilot Program

Whose behavior are we trying to change? and How?

How the pilot will work:



# Home Energy Reports (HERS) is a Cost Effective Energy Resource

Behavioral Based Energy Efficiency - Home Energy Reports				
	20,000 Households			Total
	Year 1	Year 2	Year 3	
<b>MWh Savings</b>	7,124	9,040	9,169	25,333
<b>kWh/Household</b>	356	452	458	
<b>Total Resource Cost</b>	1.17	2.03	2.06	1.67

# Effecting Behavior Change in the Small Commercial Sector

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In Partnership with  
**Starbucks, PSE, PECO, and Lucid Design**

BPA 2012 Energy Efficiency Utility Summit  
Laura McCrae, Principal Utility Analyst, Snohomish PUD

May 8, 2012



# Pilot Program Goals

1. Demonstrate employee behavior change driven energy savings in the small commercial environment
2. Identify key program components and drivers for persistence
3. Develop a replicable, scalable program design
4. Pilot M&V approach for behavior based efficiency in small commercial buildings

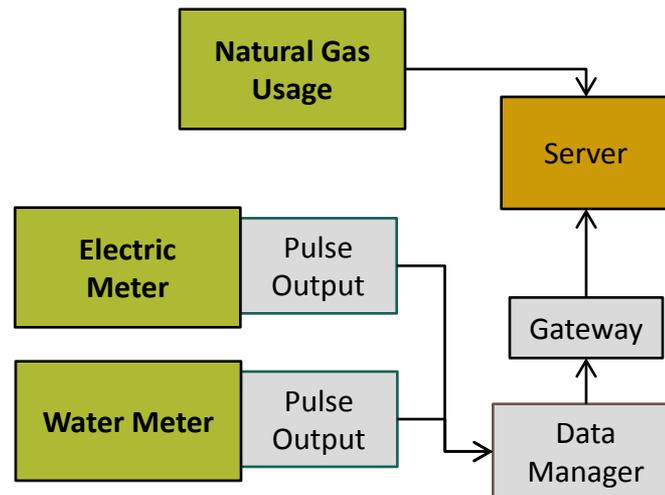
# Overview of Approach

1. Leverage existing infrastructure where possible
2. Give store employees access to real-time information
3. Motivate behavior change through competition
4. Calculate savings using a whole building approach, including water and natural gas impacts
5. Quantify competition benefits and results
6. Aid and monitor persistence
7. Evaluate process and savings

# The Solution – Gather Real Time Data

Gather real time energy data

- meter upgrades
- data communication



# The Solution – Push Real Time Data

Gather real time energy data

- meter upgrades
- data communication



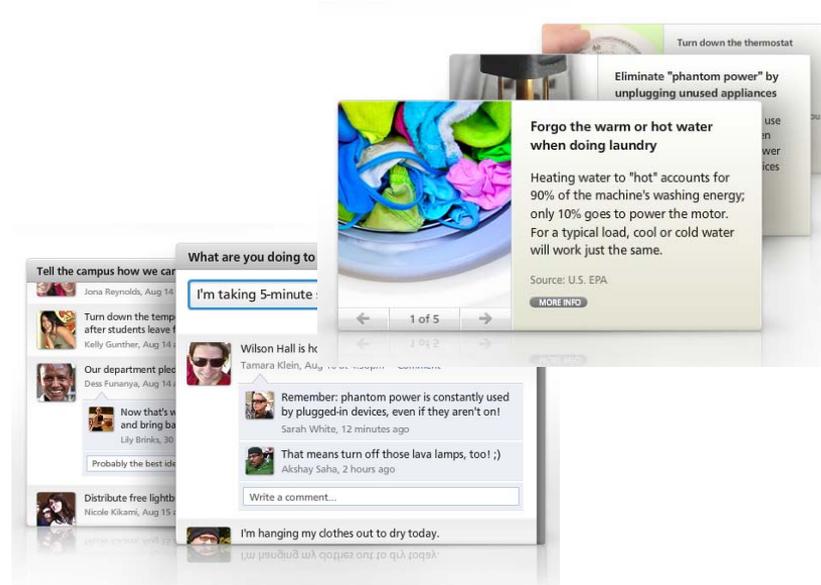
Provide store partners access to real time energy information

- create metrics
- provide access to information portal
- connect to social media

# The Solution – Provide Guidance

Gather real time energy data

- meter upgrades
- data communication



Provide store partners access to real time energy information

- create metrics
- provide access to information portal
- connect to social media

Provide guidance on energy saving behaviors

- analyze saving opportunities
- prepare and deliver engaging educational materials

# The Solution – Behavior Change

- design and manage energy saving competition
- reward top performers

Gather real time energy data

- meter upgrades
- data communication

Store partners implement energy saving behaviors



Provide store partners access to real time energy information

- create metrics
- provide access to information portal
- connect to social media

Provide guidance on energy saving behaviors

- analyze saving opportunities
- prepare and deliver engaging educational materials

# Aid & Monitor Persistence

Gather real time energy data

Store partners implement energy saving behaviors

Provide store partners access to real time energy information



Provide guidance on energy saving behaviors

# Pilot Timeline

Spring  
2012

- Planning & Design
- Metering Upgrades and data integration
- Pre-intervention data collection

Summer  
2012

- Contest roll-out and implementation
- Data collection
- Contest winners!

Fall – Winter  
2012

- Light touch persistence monitoring
- M&V and Third-party EM&V

# Thank you

**Laura McCrae**

Principal Utility Analyst, Planning & Evaluation

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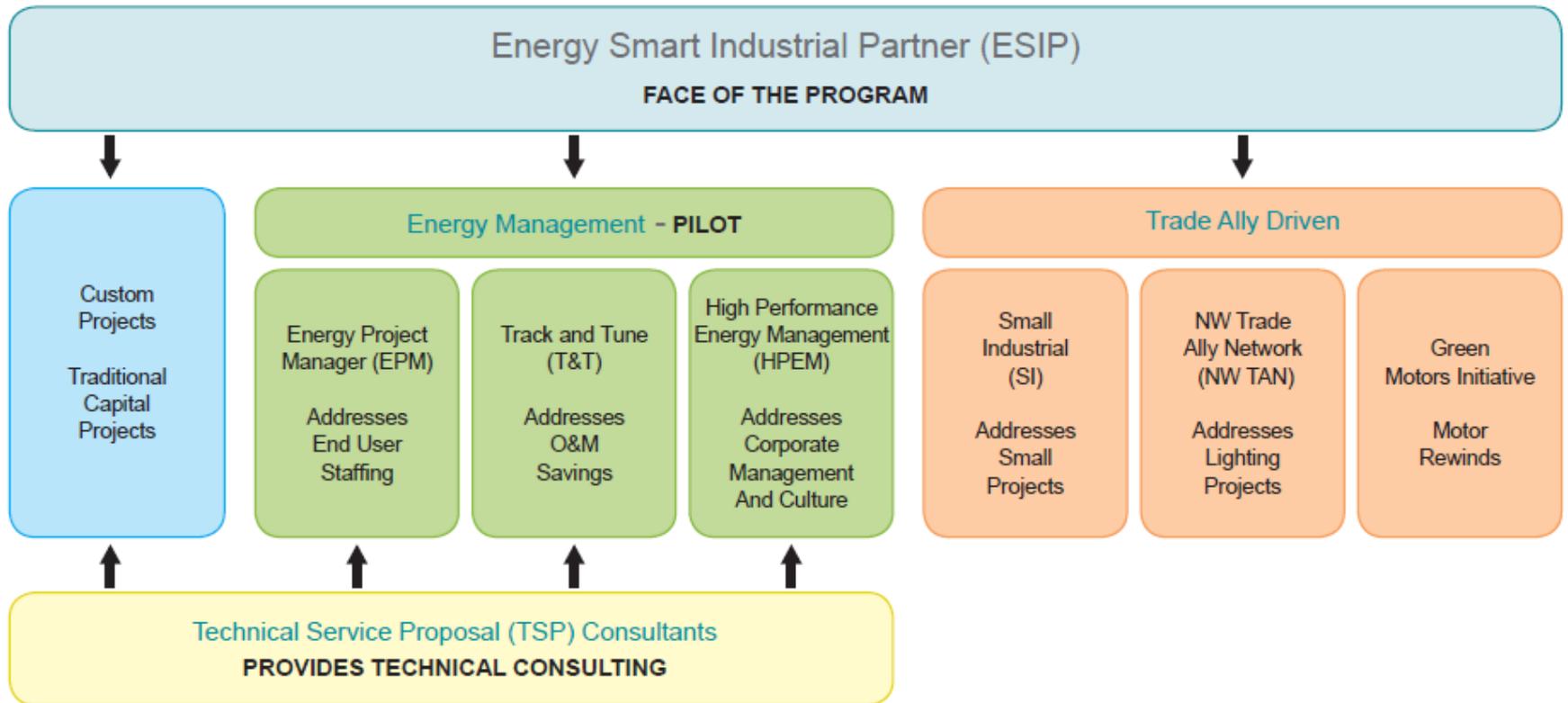


# ESI Behavioral Change Pilot

Presented by:  
Steve Martin  
Energy Smart Industrial



# ESI Energy Management Pilot





# Why Pursue Behavioral Change?

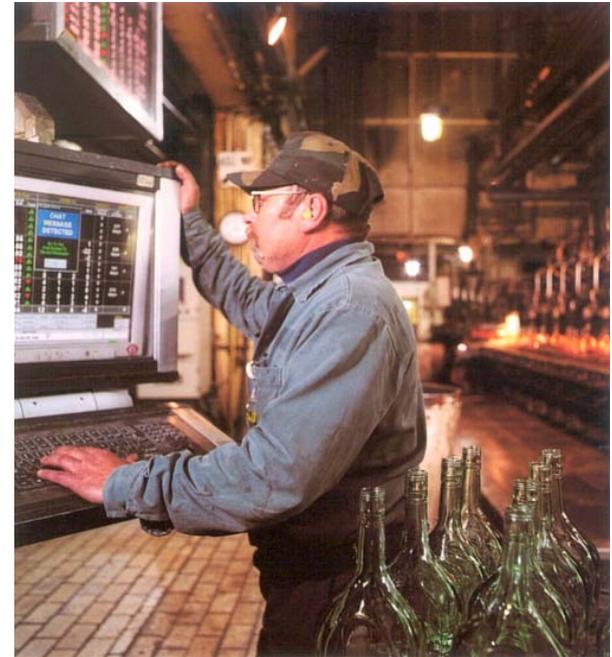
- **Utility Perspective**
  - 33% of industrial sector potential
  - Cost-effective resource acquisition
  
- **End User Perspective**
  - Capital constrained, or limited capital projects
  - Provides mechanism to engage the broader organization



# Who manages the use of energy?



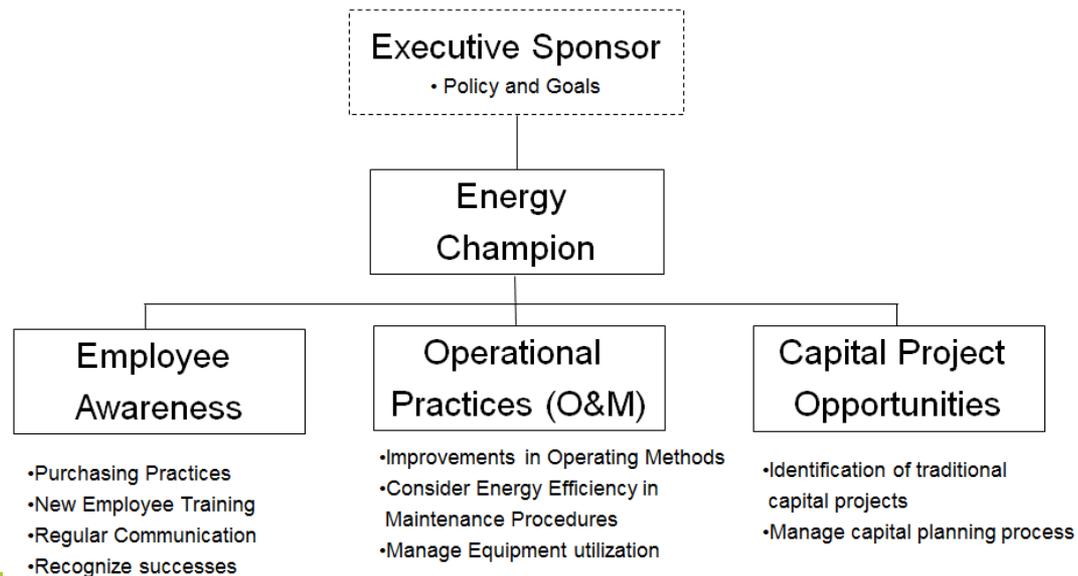
*or*



- Track and Tune and HPEM empower employees to control and reduce energy usage

# Phase I: The Foundation of SEM

- Executive Sponsorship
- Energy Champion and Team
- Measurement and Monitoring



# Phase II: Identifying and Inspiring Action

- Where is energy used?
- Identify low-cost/no-cost behavioral improvement ideas and technical opportunities
- Equip end users with implementation strategies

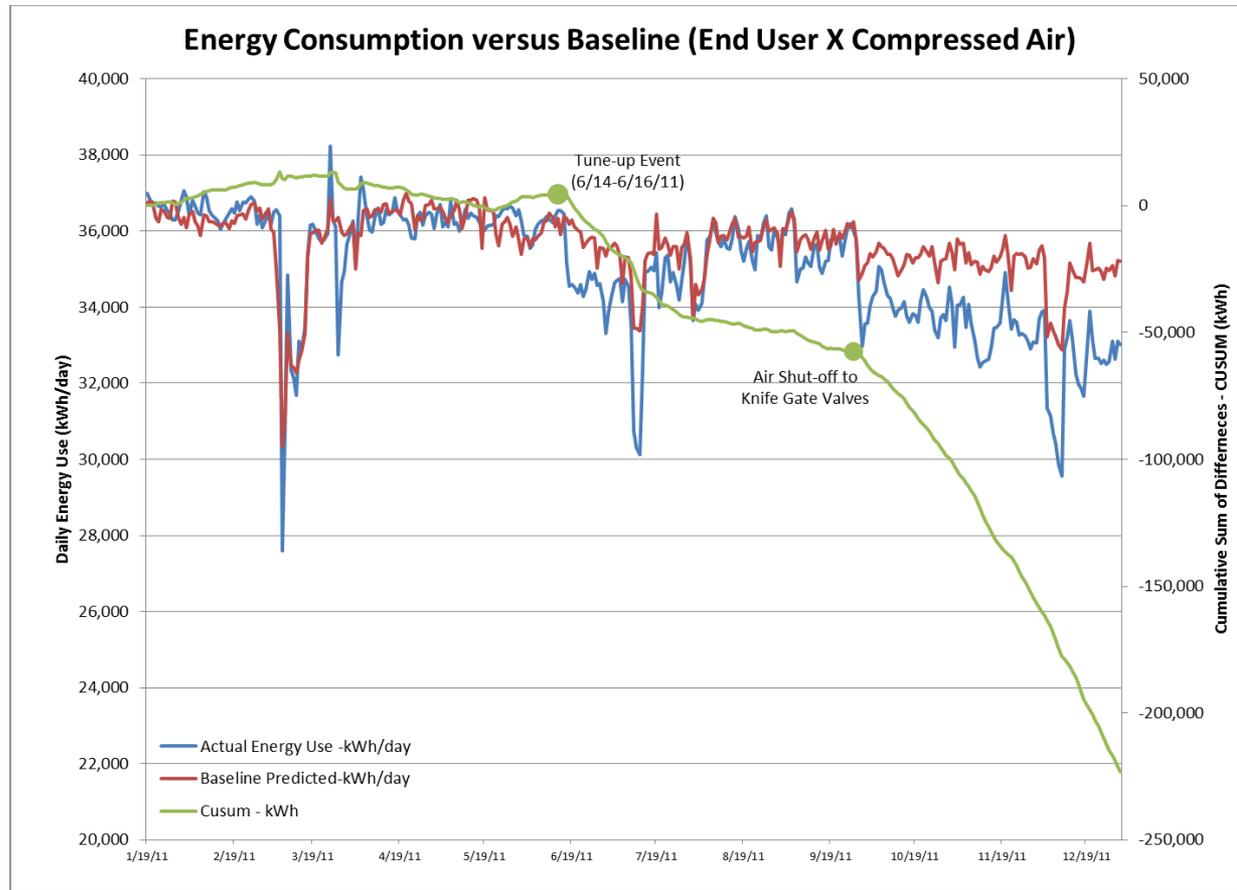
# Importance of Early Wins

- Key Characteristics
  - Highly visible to organization
  - Unambiguous
  - Clearly related to the HPEM or T&T effort
- Helps Energy Team address skeptics
- Momentum builders

# Examples of Behavioral Change

- Use most advantageous equipment first
  - Requires engineering calculations followed up by a sound training and communication plan.
- Modify daily maintenance procedures
  - Includes items to keep equipment operating at peak performance, and staging for startup/shutdown.
- Adapt set-points to match the load
  - Rely on control systems where possible, but don't be constrained to areas that employ automation.

# Monitoring, Targeting and Reporting

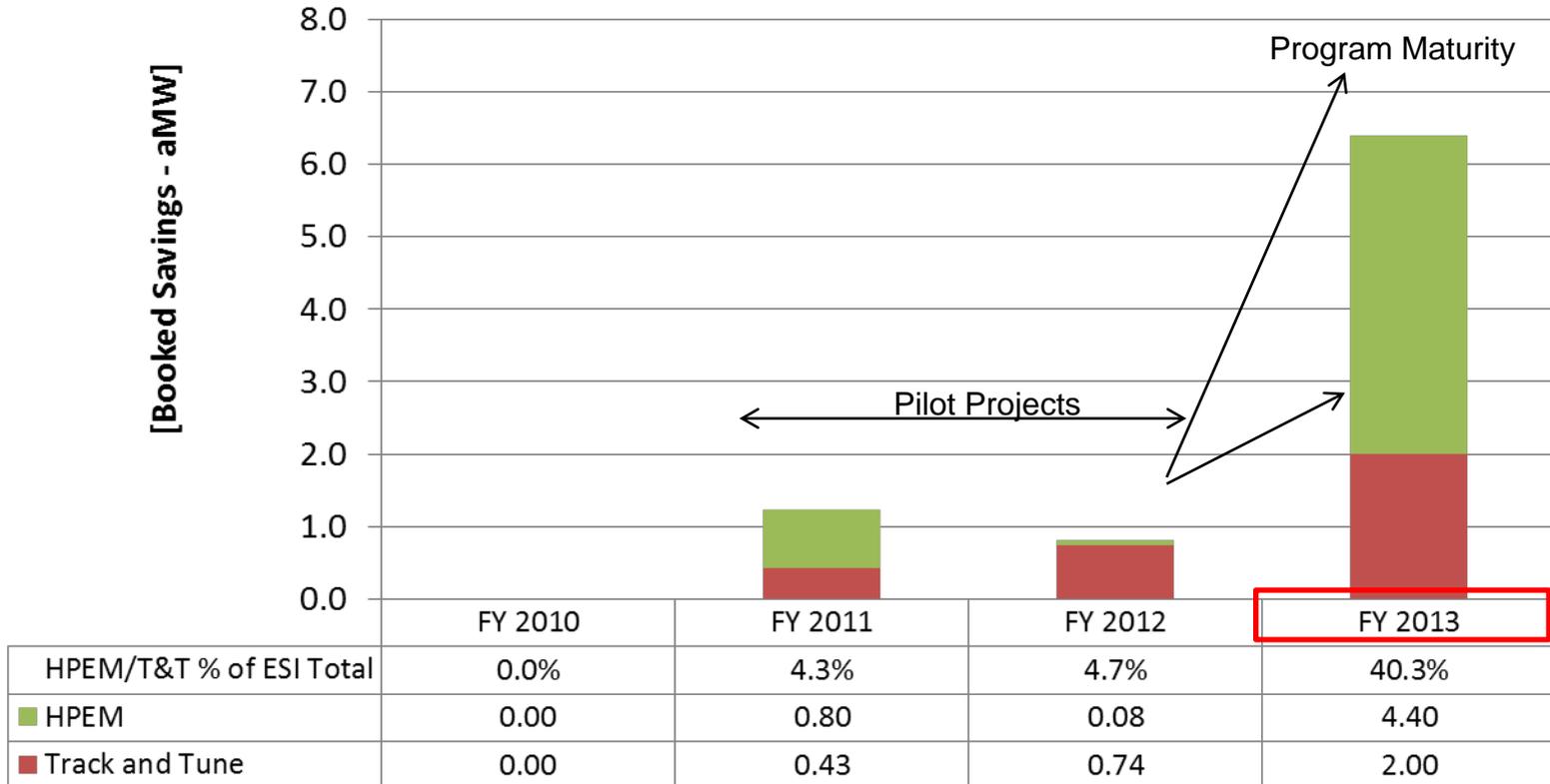


# Phase III: Anchoring the Change

*“Shallow roots need constant watering”*

- Keys to Persistence
  - Continuity in executive sponsorship
  - Importance of alignment to corporate goal
  - Ongoing measurement and monitoring
  - Implementation of an Energy Management Plan

# Energy Management Pilot: Building a Pipeline of Low-Cost Acquisition



FY2011 booked savings – FY2012 and FY2013 projected savings

# Contact

For more information, contact:

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