SDRCC Energy Efficiency Network Meeting
October 2nd, 2019 | 10.30 AM - 1.30 PM

Highlighting research and programs that connect energy efficiency, communication and behavior change

Climate Collaborative
SAN DIEGO REGION

FALL ACTIVITY CALENDAR

- Energy Efficiency
- Adaptation Needs Assessment
- Sea Level Rise and Credit Risk
- ARCCA meeting Dec 13
- Engaging new members and leaders

For more information http://sdclimatecollaborative.org

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https://www.energyefficiencyday.org

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Energy Conservation and Behavior

Funded by National Science Foundation
Award Number: DUE 1239797

Nilmini Silva-Send
October 2019

How to better achieve energy conservation through messaging?

- Traditional approach to environmental conservation
  - Knowledge deficit model

- Limitations of model
  - No direct causal change
  - Individuals considered as independent actors

Social science-based approaches

- Social influence and social context are important
- Used in advertising

Testing Energy Conservation Behavior with Social Science

Theoretical Basis

A. Witnessing the actions of other people affects behavior

B. Direct observation of others is not required for social influence to have an effect

C. Communicating how people behave in a given situation can induce conformity

2 Studies 2008 – Nolan, Schultz et al.

Study 1: Through surveys, what are stated reasons for energy conservation?

"In deciding to conserve energy, how important is it to you

a) That using less energy saves money
b) That it protects the environment
c) That it benefits society (future generations)
d) That a lot of other people are trying to conserve energy

Sample stated as follows:

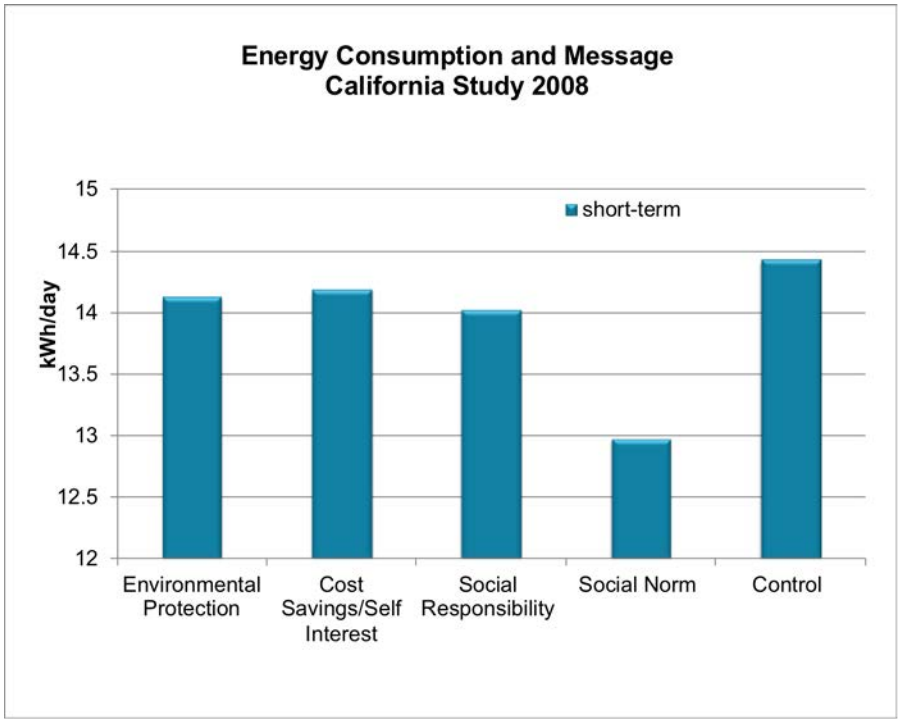
b) > c) > a) > d)

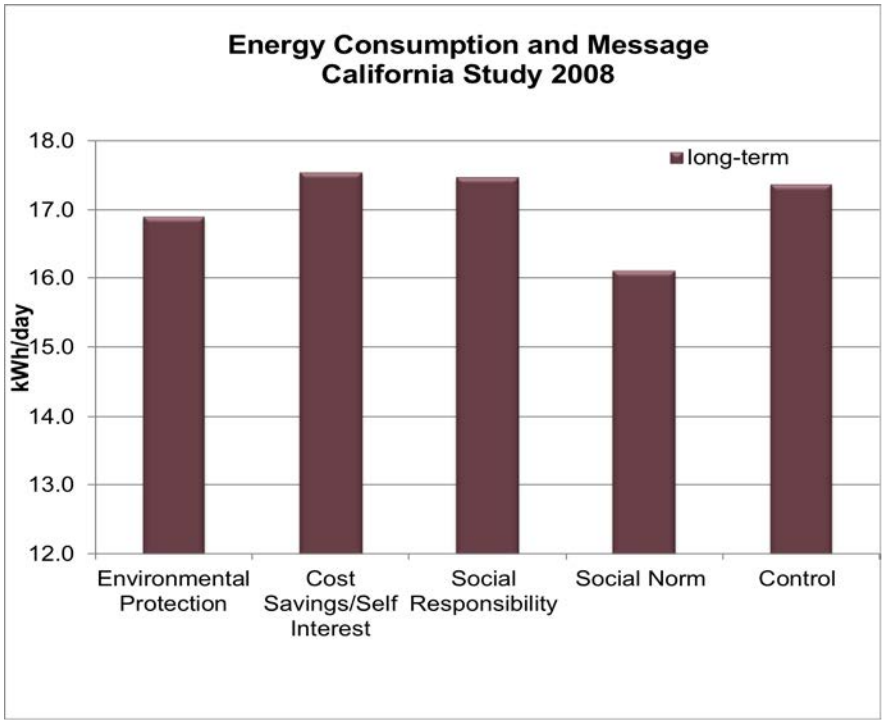
2 Studies 2008 – Nolan, Schultz et al.

Study 2: Experiment with messages based on same items, but with appeals (using door hangers) to conserve energy, and monitored actual metered (meters) electricity use:

a) Conserve because it protects the environment
b) Conserve because it benefits society (future generations)
c) Conserve because it saves money
d) Most of your neighbors conserve energy
e) Control group – use information only

Study 2 2008 – Nolan, Schultz et al.





Study 2015
Can we use lessons of 2008 and smart meters with In-Home Displays to achieve energy conservation?

Experimental Conditions	Display Only	Display + Educational
Feedback (real-time kWh)	N=65	N=65
Feedback + cost	N=65	N=65
Feedback + norm	N=65	N=65
Control (no IHD)	N=65	N=65

P. Wesley Schultz, Mica Estrada, Joseph Schmitt, Rebecca Sokoloski, Nilmini Silva-Send. Energy , Volume 90, Part 1, October 2015, Pages 351-358

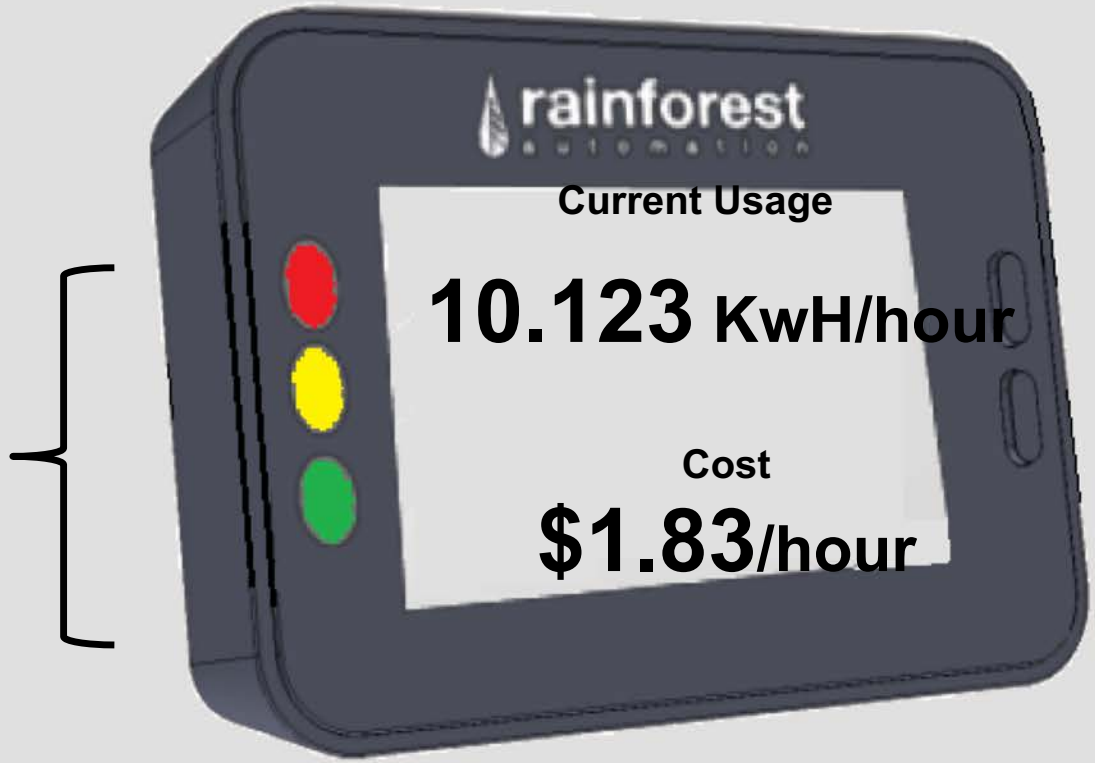
CONTROL

Stock device, unaltered

Simple FEEDBACK

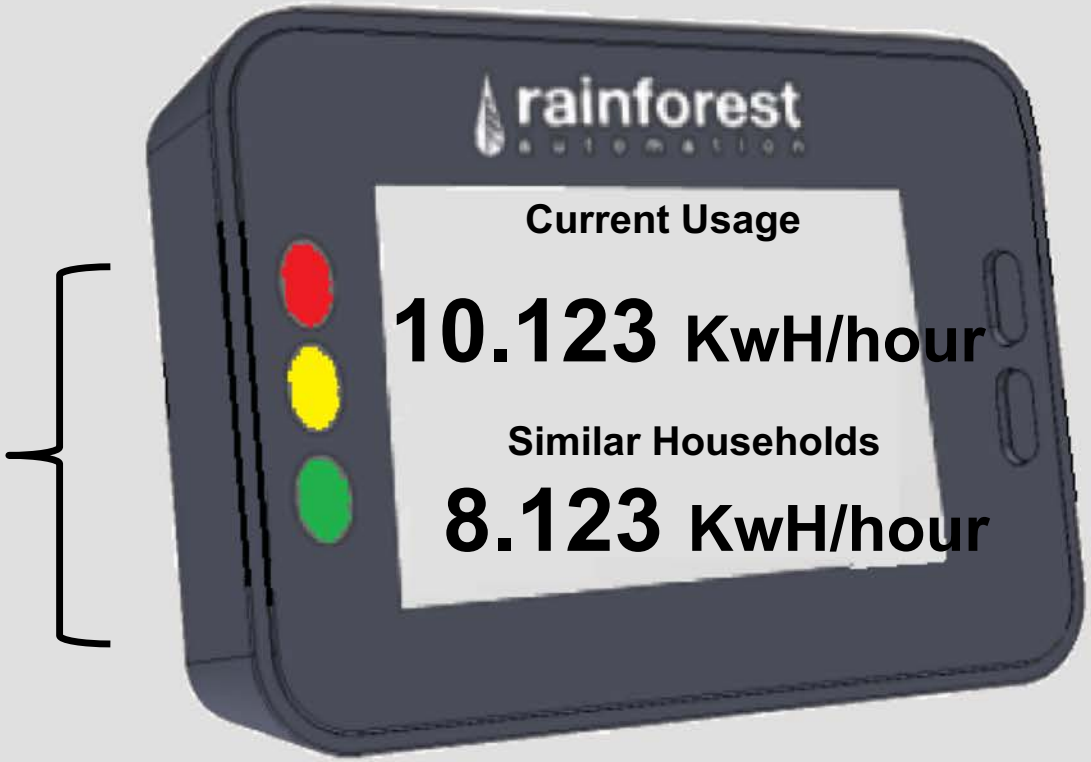
- **RED- Using more than in the past 3 minutes**
- **YELLOW- Using the same as in the past 3 minutes**
- **GREEN- Using less than in the past 3 minutes**

FEEDBACK + COST



- **RED- Using more than in the past 3 minutes**
- **YELLOW- Using the same as in the past 3 minutes**
- **GREEN- Using less than in the past 3 minutes**

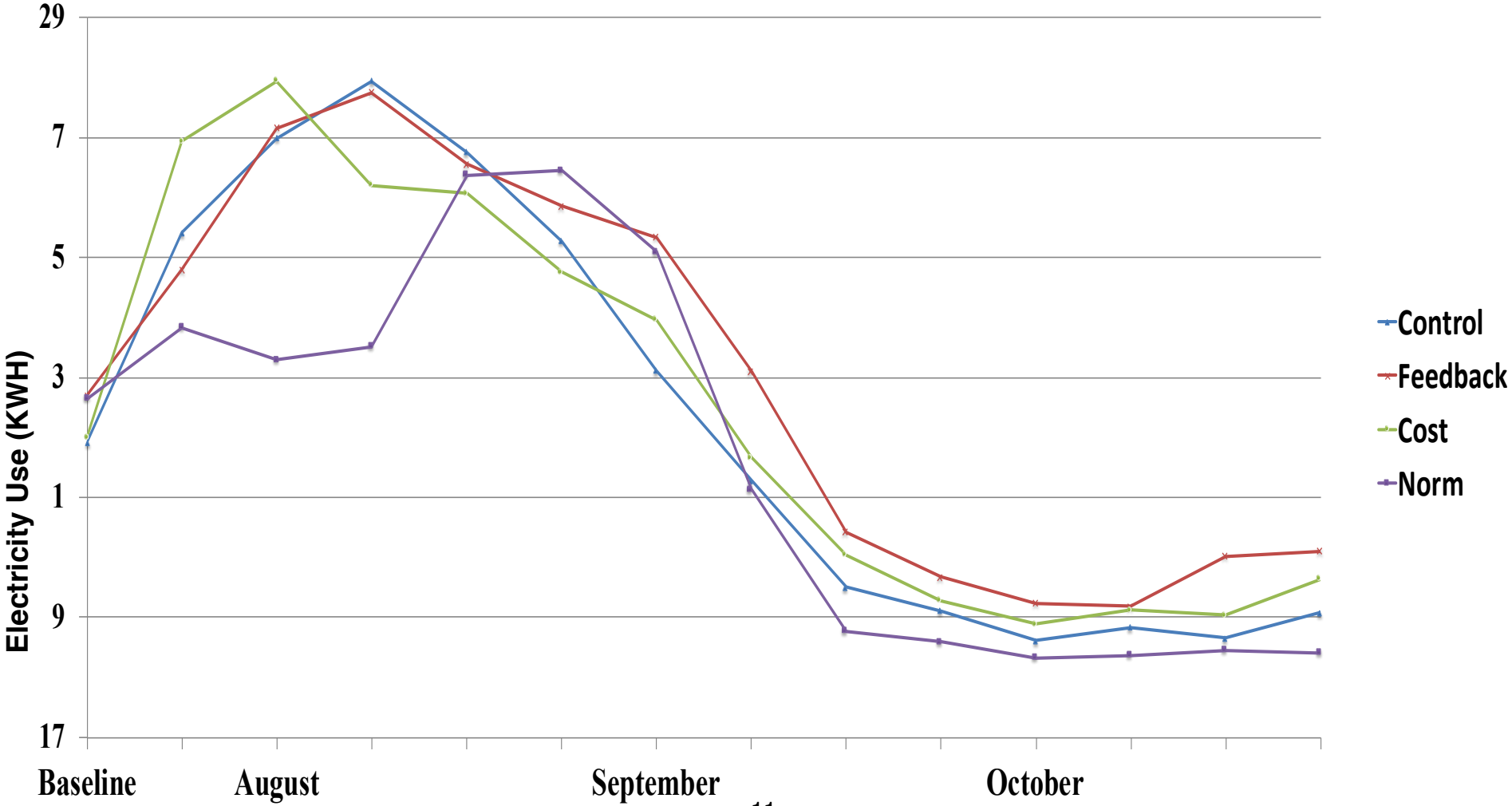
FEEDBACK + communicate what similar households are using



- **Information in the "Similar Households" is collected from the eagle devices deployed for the pilot (N=128). Calculated in "real time"**

- **RED- Using more than others in similar households**
- **YELLOW- Using the same as similar households**
- **GREEN- Using less than similar households**

Results 2015
Using smart meters with IHDs to message conservation



Lessons on communicating about energy conservation using smart meters

Control: Energy use rose during the first month, likely due to weather effects

Simple Feedback: Energy use stayed low initially, novelty effects from device wore off by second week

Cost: Energy use was high initially. Display showed hourly cost, often < $1. Participants may have interpreted consumption as inexpensive

Social Influence: No significant increase in use, especially initially, despite possible weather effects.

Other: Participants with the social influence message less likely to trust the device and came back to check. Effective in keeping use relatively low, but devices perceived as inaccurate

Thank you!

Nilmini Silva-Send

silvasend@sandiego.edu

October, 2019

EPIC
ENERGY POLICY INITIATIVES CENTER
UNIVERSITY OF SAN DIEGO SCHOOL OF LAW

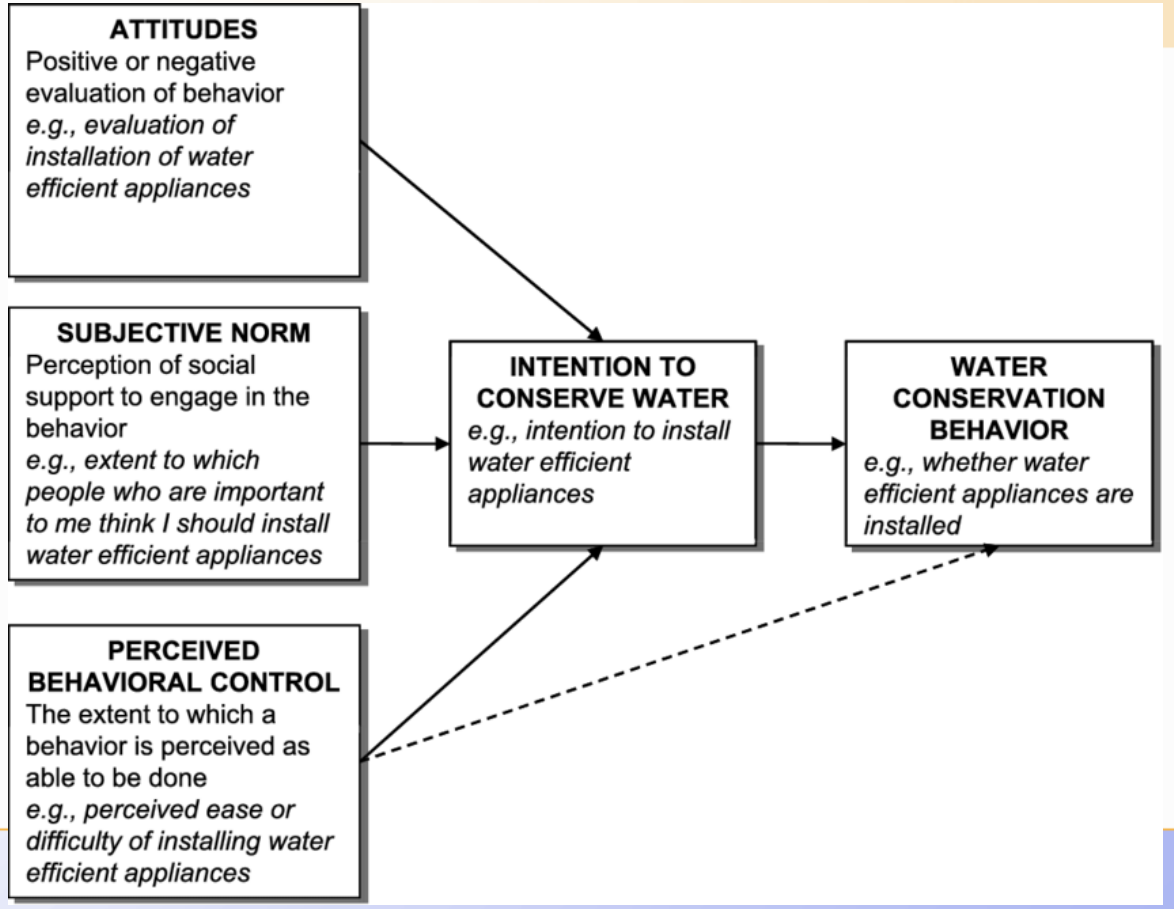
Strategic Communication

Dr. Kathleen Czech
San Diego State University

Research

- Less is more in energy conservation and efficiency messaging.
- Energy Policy 2018
- Theories of behavior change
  - Theory of planned behavior (Fishbein & Ajzen)
  - Theory of reasoned action (Fishbein & Ajzen)

Behavior


ATTITUDES
Positive or negative evaluation of behavior
e.g., evaluation of installation of water efficient appliances
SUBJECTIVE NORM
Perception of social support to engage in the behavior
e.g., extent to which people who are important to me think I should install water efficient appliances
PERCEIVED BEHAVIORAL CONTROL
The extent to which a behavior is perceived as able to be done
e.g., perceived ease or difficulty of installing water efficient appliances
INTENTION TO CONSERVE WATER
e.g., intention to install water efficient appliances
WATER CONSERVATION BEHAVIOR
e.g., whether water efficient appliances are installed

Results

- Emphasizing the prevalence of undesirable behavior
  - If it is wide spread then I can do it too
- Identifying a victim more persuasive and relevant
- Less is more
  - Specific one reason

Communication Strategies

- Step One: SWOT Analysis
  - Strengths
  - Weakness
  - Opportunities
  - Threats
- Step Two: A Strategy
  - Goals
  - Objectives
  - Strategies
  - Tactics

Communication Strategies

Know where you're going

If you don't know where you're going, any tool will get you there

Goals

What are your marketing goals? Increase sales, improve credibility and visibility in the market, raise brand recognition?

Objectives

What are the specific objectives? E.g. grow LinkedIn connections, engage in conversations on Facebook, increase site traffic

Strategies

What is your core strategy? Create thought leadership content, build and engage a niche following, etc.

Tactics

What are the tactics that will help you reach those? E.g. posting daily, including weekends, responding to comments within 6 hours, forming a Twitter team

Tactics & Messages

- Tactics – How?
  - Communication Tactics
    - How does your message use verbal communication?
    - How does your message use nonverbal communication?
    - How can either be made stronger?
  - Message Structure
  - Clarity
  - Power Words
  - Ethical Language
  - Nonverbal Communication

Tactics & Messages

- Interpersonal Communication Tactics
  - Personal Involvement
  - Information Exchange
  - Special Events
- Organizational Media Tactics
  - General Publications
  - Direct Mail
  - Print Media
  - Audio-visual Media
  - Digital Media
- The Tactics of Social Media
  - Social Networks
  - Blogs
  - Podcast
  - Websites

Example

- **Objective:** To increase the Hispanic community's knowledge of the museum's programs
- **Strategy:** Seek face-to-face opportunities to inform Hispanic community opinion leaders about our museum.
- **Tactic 1:** Address the January meeting of the city's Hispanic Chamber of Commerce.
- **Brief Description**:
- **Deadline:**
- **Budget:**
- **Special Requirements**:

Brainstorm Tactics & Messages

- Brainstorm
- Questions

Thank you!

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SAN DIEGO REGION

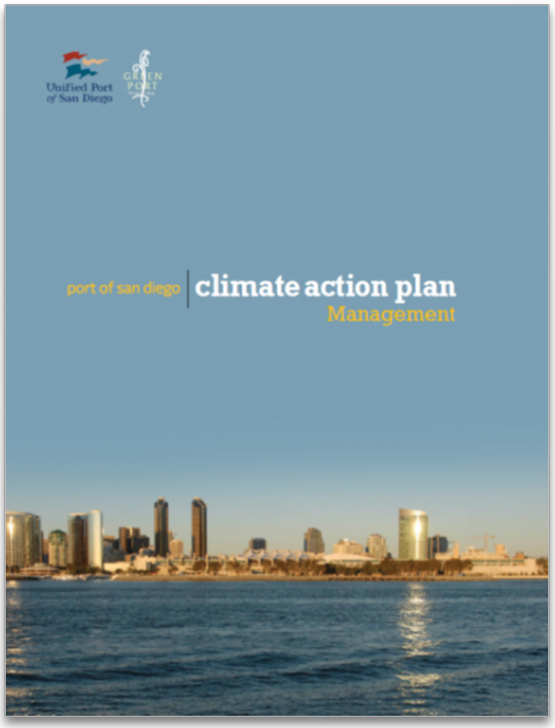
PORT of SAN DIEGO
Waterfront of Opportunity

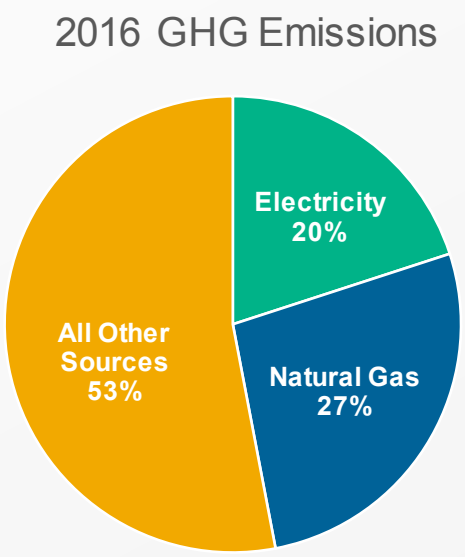
Energy Efficiency and Behavior Change

Kellie Carlson and Rachel Stern

Climate Collaborative Meeting, October 2, 2019

Climate Action Plan





- Port employee and tenant employee campaigns support our Climate Action Plan
- Energy usage Port-wide accounts for almost 50% of our GHG emissions
- 97% of our Port-wide energy use is from tenant operations

Why Sustainability Engagement Campaigns?

Gamification programs have resulted in energy usage reductions anywhere from 3 to 20%

Energy Goals Campaign

A sustainability employee engagement and education strategy

PORT of SAN DIEGO

SDGE
A Sempra Energy utility

the Energy Coalition

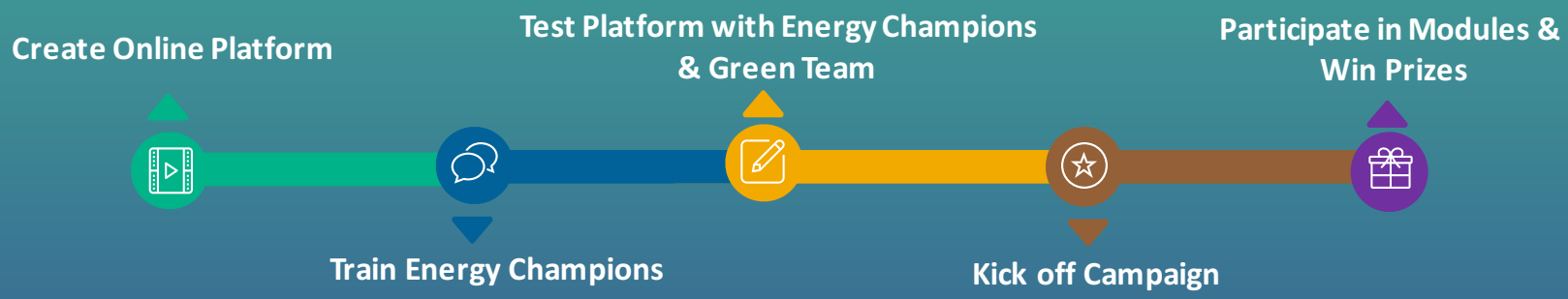
Energy Goals Campaign

PLEDGE

LEARN

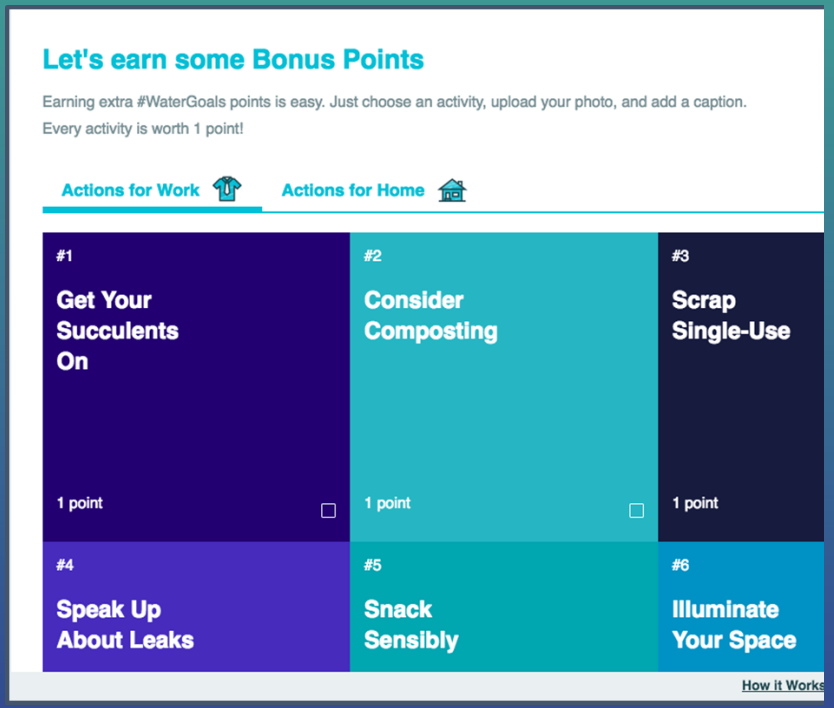
ACT

Energy Goals Campaign-Modules



Energy Goals Campaign-Modules

- Module 1: Energy Sources
- Module 2: Energy Use
- Module 3: Energy Efficiency & Conservation
- Bonus Points



Energy Goals Campaign

Lesson Activity

San Diego's Energy Mix

The electricity for the San Diego area is provided to customers by San Diego Gas & Electric. SDG&E is a pu
provides energy to 3.6 million people across San Diego County and southern Orange County. Its parent com
which also owns Southern California Gas Co.

SDG&E provides an op vable energy at home but don't have the abi
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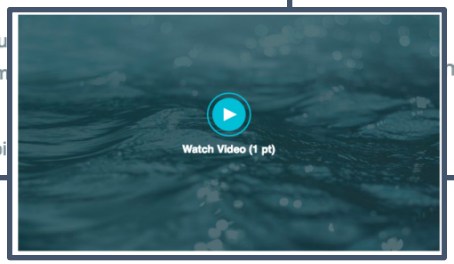


Lesson Concept

Energy Sources

Energy is everything – it's in each step we take, phone call we make, and every light we flip on – powering our lives each and every day. Where does this massive amount of energy we're all using at home, at work, and in our communities come from, and how do we "make" energy work for us? What does it mean for energy to be renewable or nonrenewable, anyway? What are the pros and cons of different energy sources and what does it mean for our individual lives and our communities? Let's find out!

What is energy?

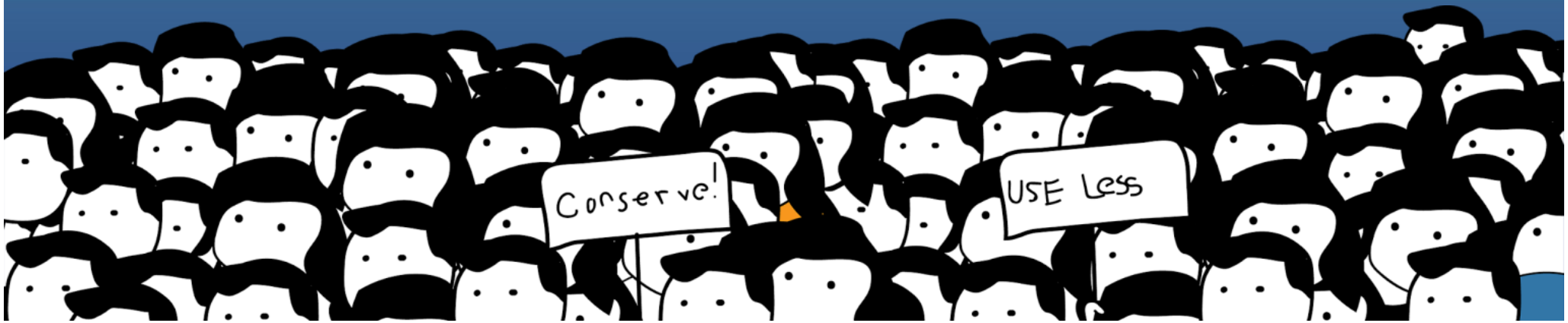
So, you already know that you need energy to power your electronics (you're likely reading this on a computer or phone right now). But if energy is everything – then what is it, exactly? Energy is the ability to do work, and there are lots of different forms energy takes in order to get the job done. All living things need a constant source of energy in order to live – your body is always "doing work" to keep you alive!) This presents itself through food, water, oxygen, and a whole lot more. The Sun is constantly radiating energy that reaches the Earth, and plants, for example, use this solar energy to make their food – which we and other living organisms rely on to keep on living. Humans have figured out ways to control energy – and we are able

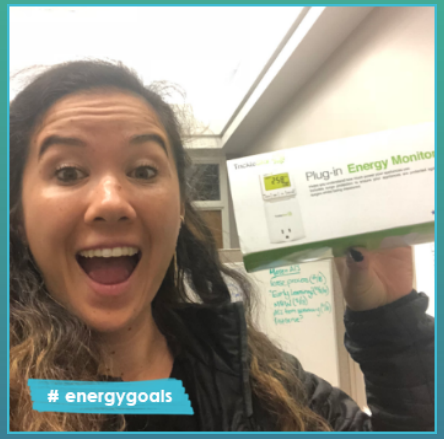
Energy Goals Campaign Highlights

Over ***800*** energy saving actions reported!

37% employee participation rate

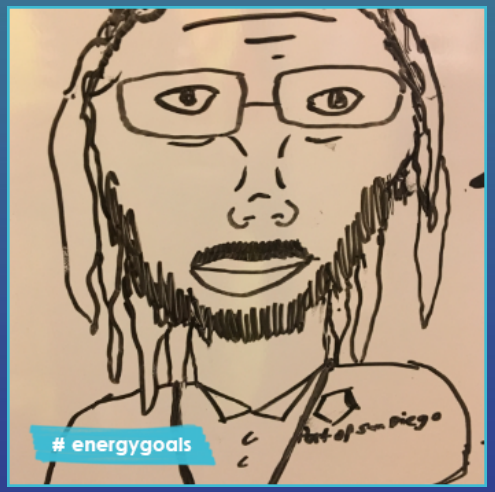
Every department had at least 14% participation rate




Plug-in Energy Monitor
energygoals


energygoals


energygoals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energygoals


Port of San Diego
HARBOR
energygoals

Green Employee Engagement Campaign (GEEC)

SDGE
A Sempra Energy utility

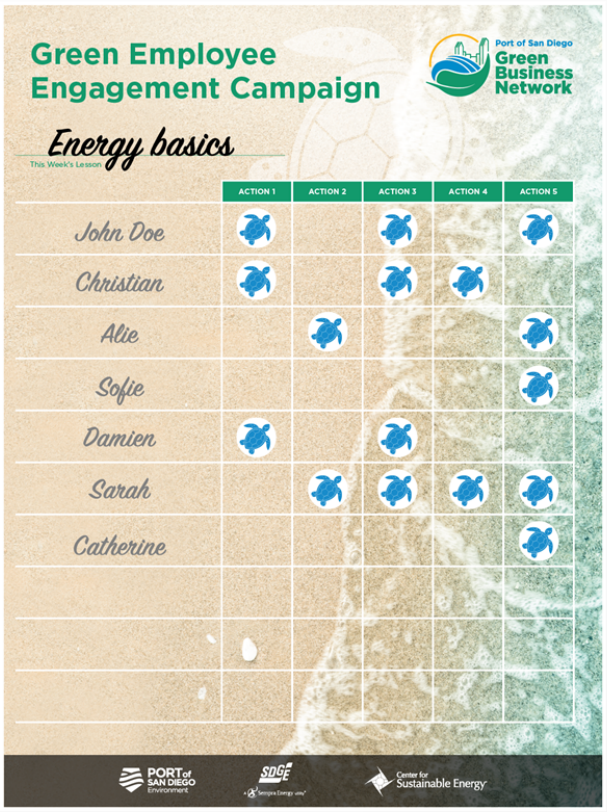
PORT of SAN DIEGO

Center for Sustainable Energy™

Green Employee Engagement Campaign (GEEC)

Energy Basics

Lighting



Plug Load

Water Efficiency

GEEC Participating Businesses

San Diego Yacht Club

12 participants
Maintenance and housekeeping

San Diego Convention Center

77 participants
Various departments

Sun Harbor Marina

14 participants
Boat owners and commercial tenants

Hilton San Diego Airport/Harbor Marina

17 participants
Various departments

CP Kelco

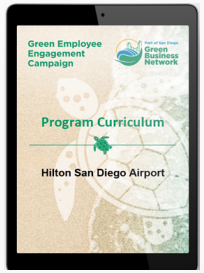
66 participants
Environmental, IT, engineering, and lab staff

GEEC Program

Deliver Lesson Plan to Leads

Participants Take Action

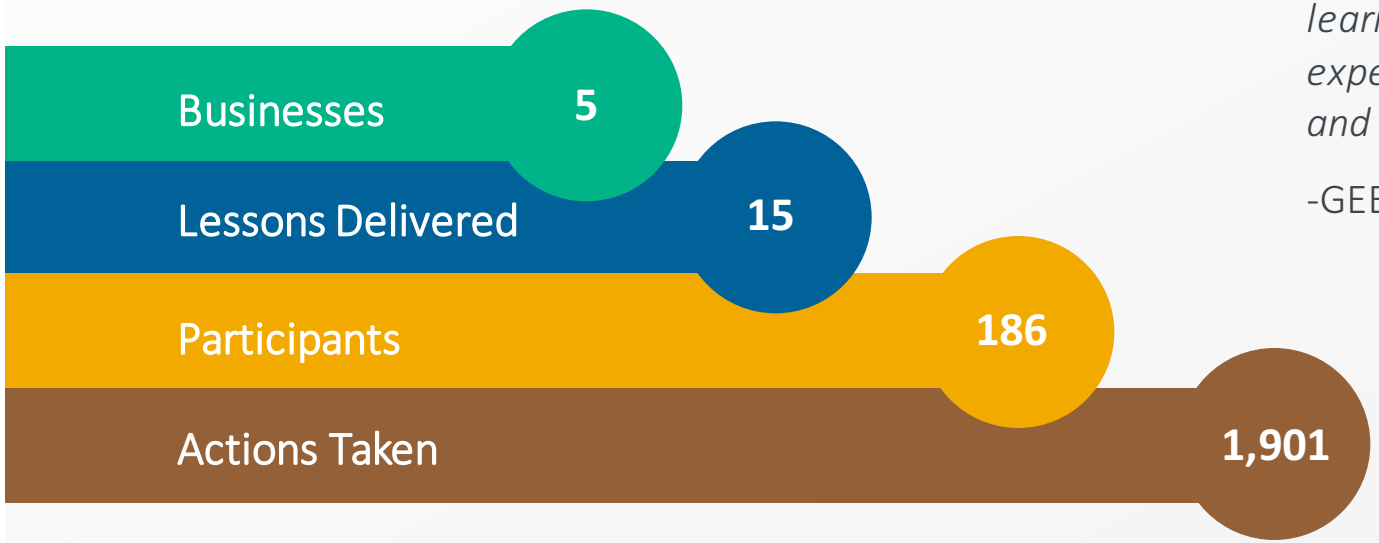
Win Prizes



Leads Deliver Lesson to Participants

Submit Action Cards

Program by the Numbers



Very, very educational! I learned a lot more than I expected. I enjoyed the videos and all the visuals presented!

-GEEC Participant

Activity

Use the Kill A Watt meter to measure the energy use of an electronic device- take a selfie and email to rstern@portofsandiego.org

Think of and list the different **types** of lighting fixtures at your home. Use the LED Bulb Purchasing Guide for reference

Find out the solar potential of your home, Visit Google's Project Sunroof at **google.com/get/sunroof**. How much money can you save?