



**CERTS**

CLEAN ENERGY RESOURCE TEAMS



# Behavioral Science Training

**Diana McKeown**

**Clean Energy Resource Teams**

**April 13<sup>th</sup> 2019**

# Today's Talk



- Behavior Change Science
- Audience
- Behavior
- Barriers & Benefits
- Strategies
- Wrap-up



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# Behavior Change Science



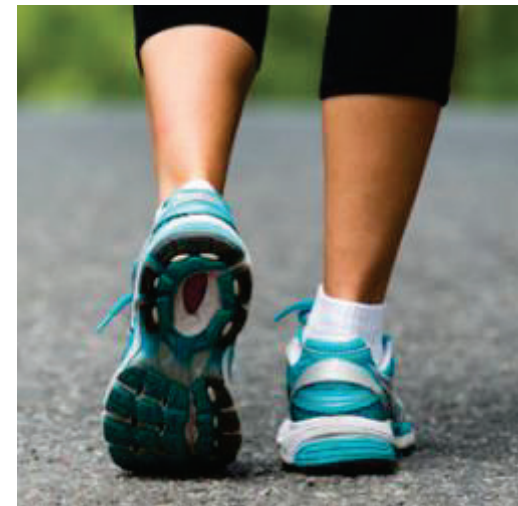
- Applying concepts from social science and psychology fields to understand why we do (or don't) take action
- Identifying what...
  - motivates us
  - stands in the way



# Why Behavior Change Science?



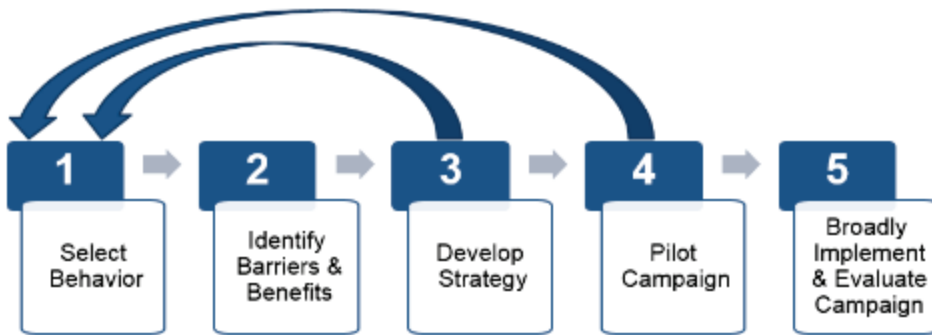
- Info-only not effective
- Economic self-interest
  - Assumes: rational thinking
  - Reality: impulse & convenience
- Knowledge → Attitudes → Behavior
  - Not always true
  - Not needed to spur behavior change



# Behavior Change Frameworks



## Community-Based Social Marketing



## Six Key Principles of Influence



## Social Change 2.0



## Fogg Behavior Model



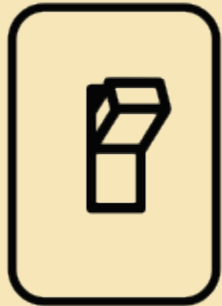
# Behavior Change Science



## Step 1



Audience



Behavior

## Step 2



Barriers



Benefits

## Step 3



Strategies

# Behavior Change Science



## Step 1



Audience



Behavior

## Step 2



Barriers



Benefits

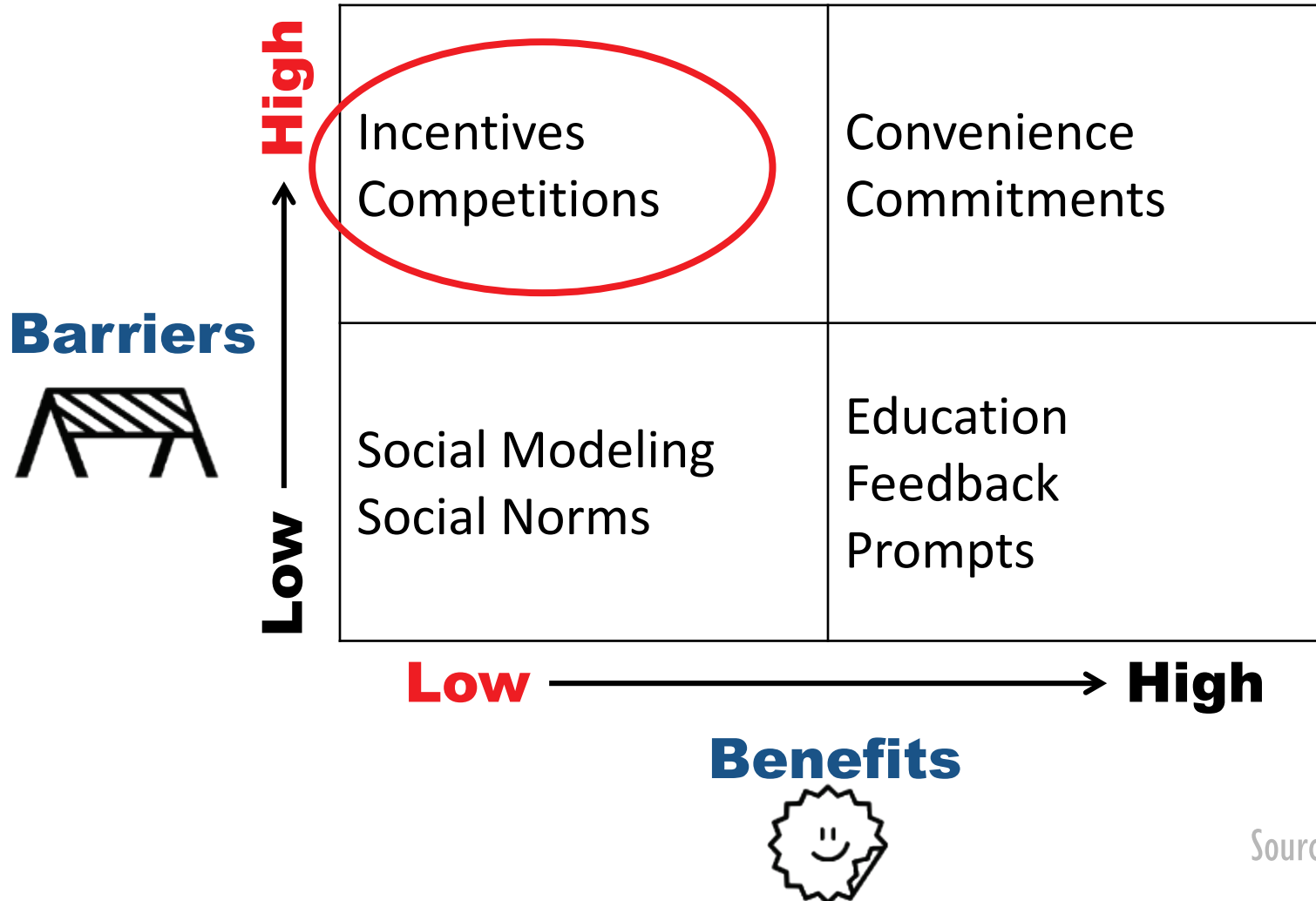
## Step 3



Strategies



# Effectively Use Strategies



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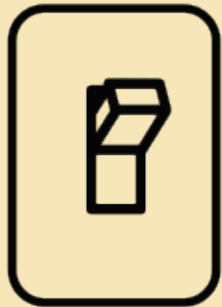
# Behavior Change Science



## Step 1



Audience



Behavior

## Step 2



Barriers



Benefits

## Step 3

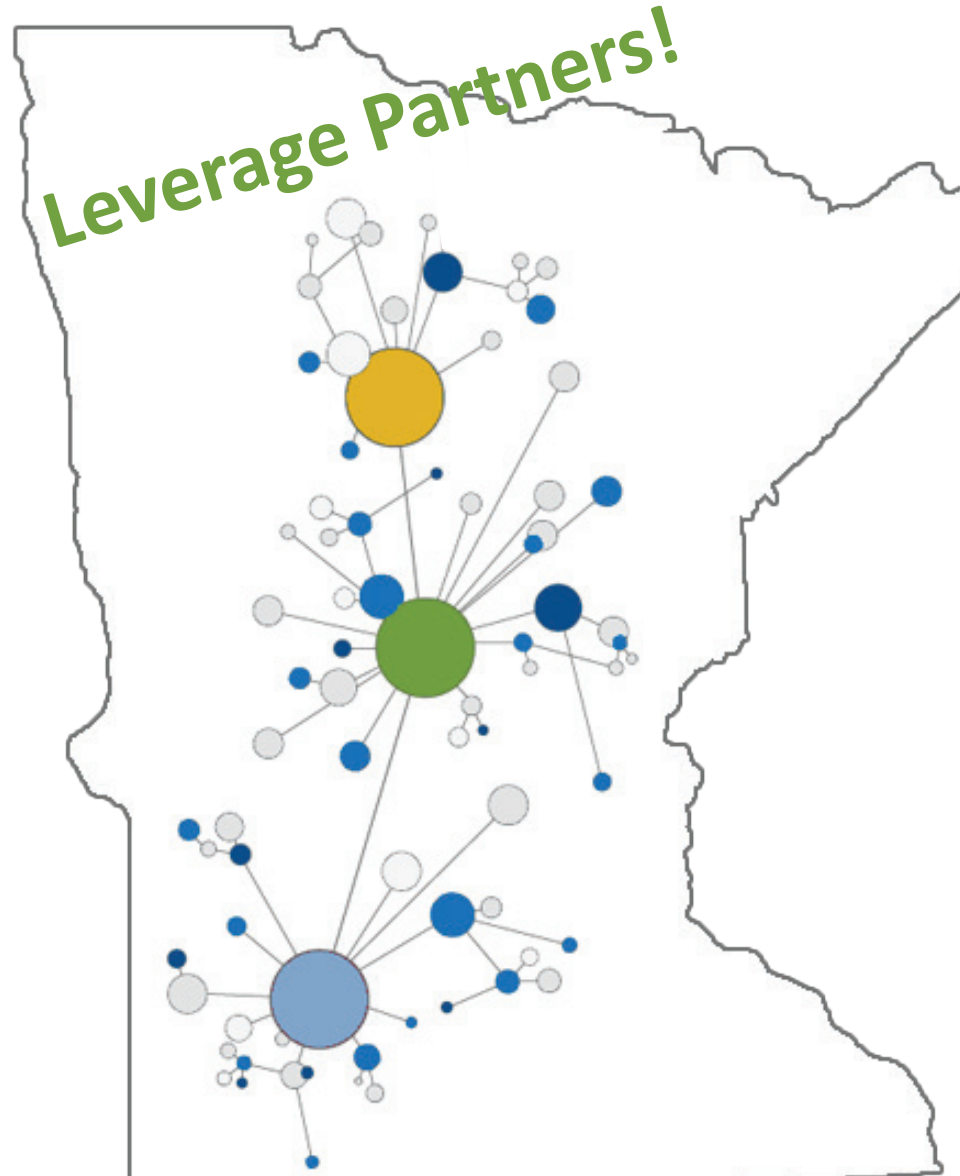


Strategies

# Define & Access Audience



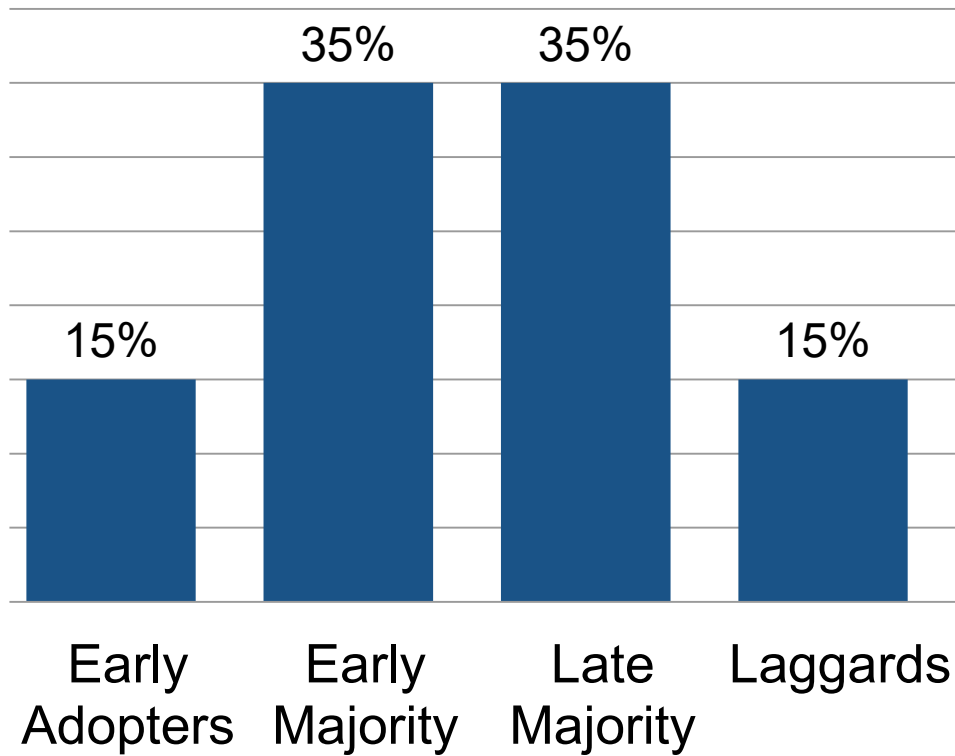
- Demographics
- Shared circumstances/obstacles
- Geographic area
- Existing networks
- “In-community”: live, work, play
- Meet people where they are
- Online, In-person, Both



# Types of People



## Innovation Diffusion Strategy



Source: D. Gershon

## American Climate Change Perspectives

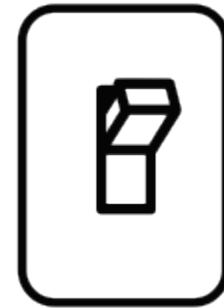


Source: C. Manning

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- **Behavior**
- Barriers & Benefits
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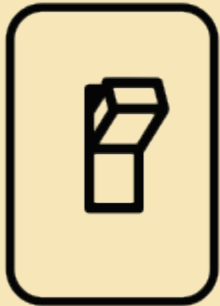
# Behavior Change Science



## Step 1



Audience



Behavior

## Step 2



Barriers



Benefits

## Step 3




Strategies

# Define Behavior



- One-time vs. repeat
- End-state
- Non-divisible





## Right Light Guide

### for General Use Bulbs

### Pros and Benefits

Today there are many lighting options available. The right bulb for you depends on how much light you need, what color light you want, and its costs and features.

**STEP 1 Decide How Much Light You Need**

**Focus on Brightness.** Different amounts of light are needed for different uses. Instead of thinking about light bulbs based solely on the amount of energy they use, focus on their brightness level.

**Lumen** is the measurement of brightness. Higher lumen bulbs produce brighter light.

**Watt (W)** is the measure of power consumption. Lower wattage bulbs can lower your electric bills.

If you like your bulb's current brightness, choose a CFL or LED with similar lumens to reduce your energy use. You may also consider a bulb that is less bright to save more.

Note: Lumen output listed on packages may vary. Light bulbs listing anywhere from 800 to 860 lumens are similarly bright, for instance.


Brightness	Incandescent	CFL	LED
450 lumens	40W	9-13W	4-8W
800 lumens	60W	13-16W	8-13W
1100 lumens	75W	17-23W	11-15W
1600 lumens	100W	23-28W	16-20W

← Least Efficient      Most Efficient →

**STEP 2 Decide What Color Light You Want**


**Choose Light Appearance.** You'll be pleased with your new bulb by choosing a light appearance that you like. All of these colors are available for LEDs and CFLs and at most brightness levels.

Note: Choose warm or soft white (2700-3000 K) to match the color of incandescent bulbs.




**Soft White, Warm White**  
Living Room, Bedroom

2700K 3000K



**Bright White, Cool White**  
Kitchen, Bathroom, Dining Room

3500K 4100K



**Natural, Daylight**  
Office, Laundry, Workshop, Garage

5000K 6500K

← Warm Color      Light Appearance      Cool Color →

**Energy Star**

**Energy Star** logo and text.

product, replacement, and energy costs use LEDs can last that long. Some unavailable. The pros and cons of

**Pros (+) and Cons (-)**

- + Saves 85% of energy use over incandescent
- + Lasts 25 times longer than incandescent
- + Great for dimmed, recessed, or enclosed fixtures
- + Performs well in cold temperatures
- Higher bulb cost

- + Saves 75% of energy use over incandescent
- + Lasts 10 times longer than incandescent
- Recessed & enclosed fixtures reduce bulb life
- Performs poorly in cold temperatures
- Contains mercury (recycling required)

22 bulbs in 20 years  
**\$270 total cost**

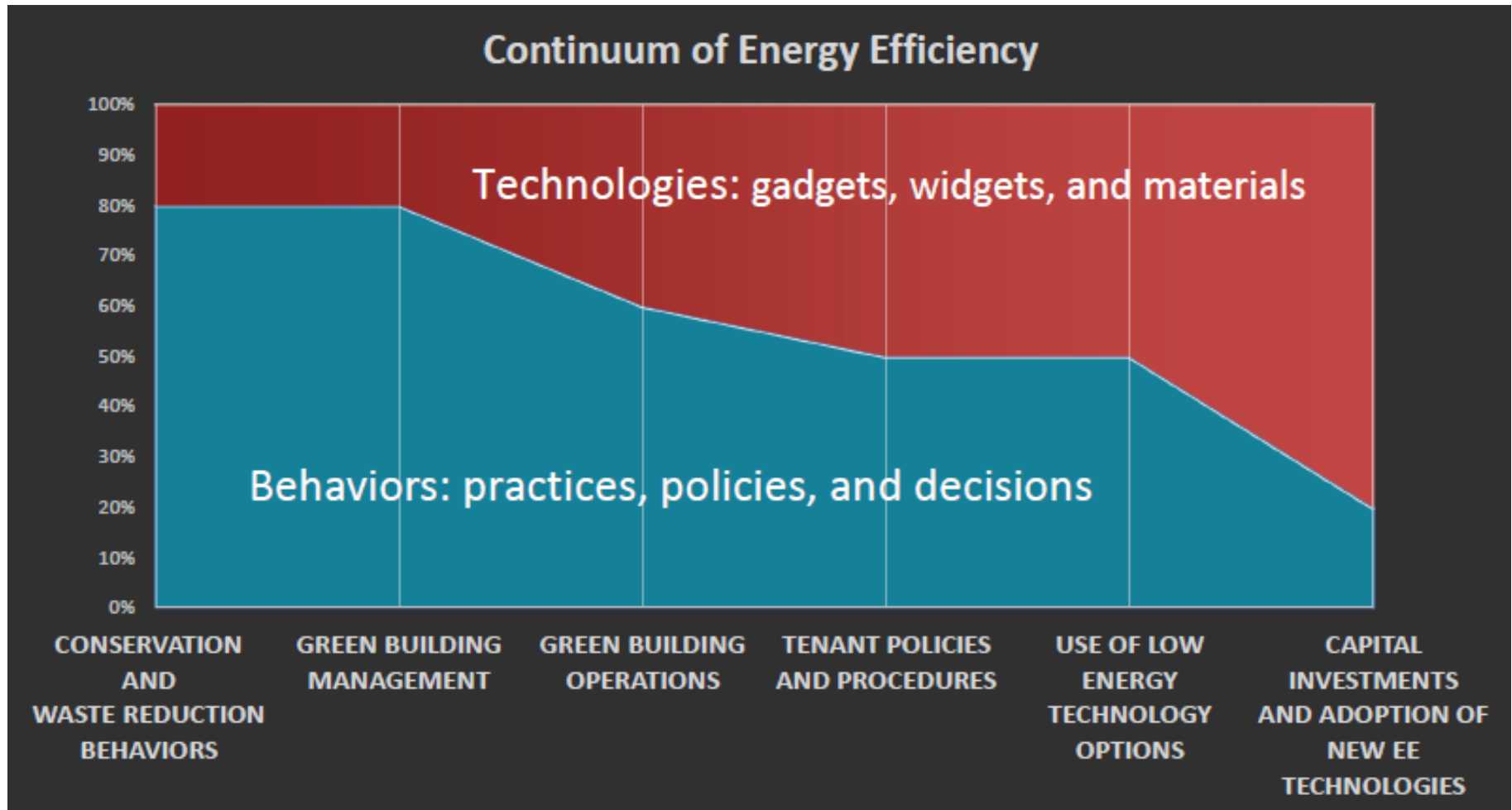
**Facts** Per Bulb  
800 lumens  
Energy Cost \$1.14  
16kWh  
22.8 years  
9.5 watts

**Resources**

Learn about lighting rebates and lighting.MnCERTS.org to learn more options.

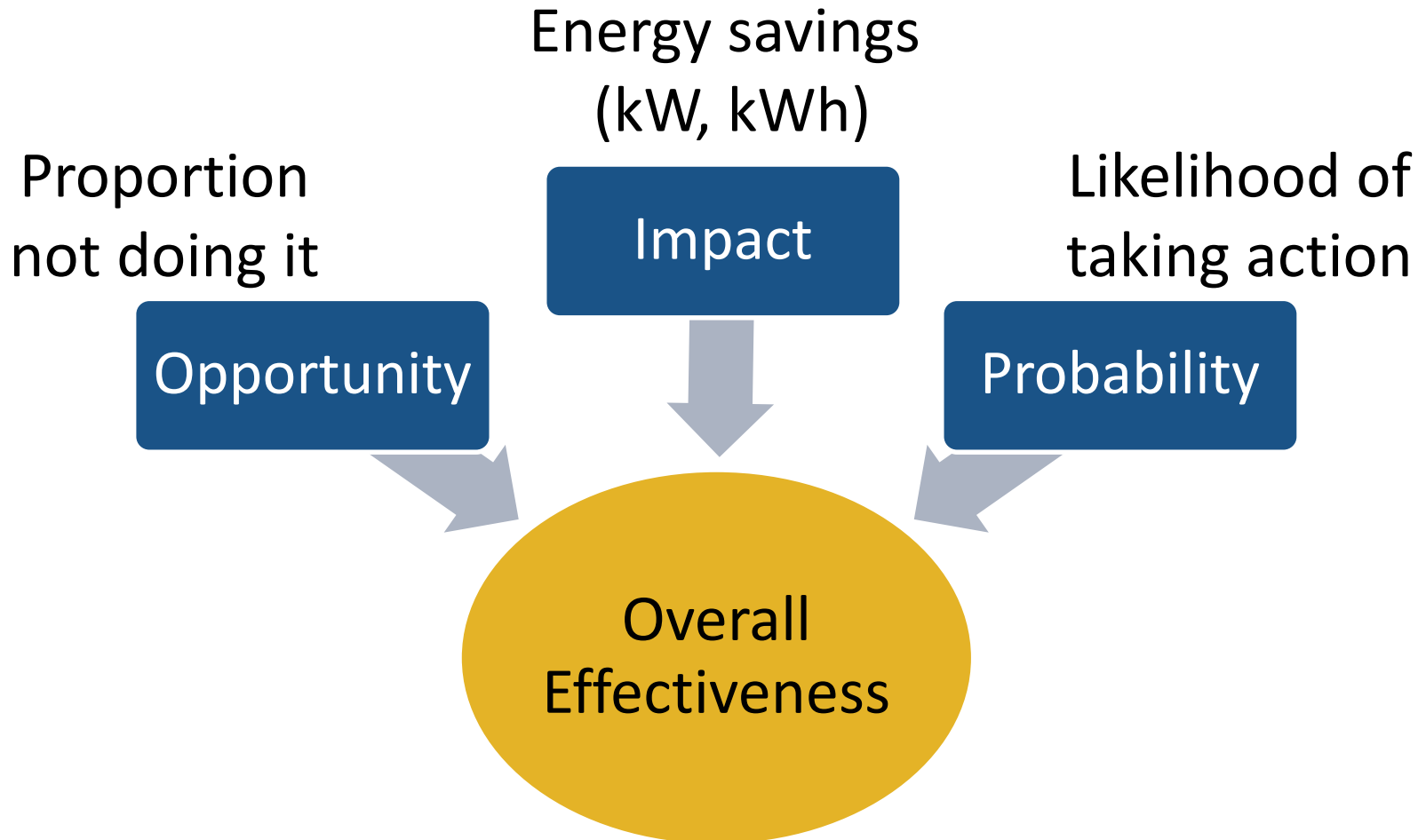


# Behavior vs. Technology



Source: K. Ehrhardt-Martinez

# Select Behavior



# Select Behavior

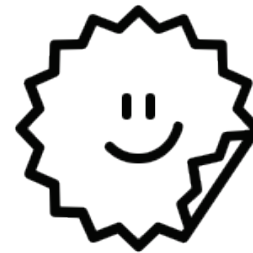


Behaviors for Residential Households	Already engaged (0-100%)	Opportunity (100 Minus Engaged)	Energy Savings per household per year	Likelihood (0-4)	Relative Score or Weight	Rank
Purchase green power	3% →	97	X 8700	X 2.15	= 1,814,385	1
Cold water wash	38% →	62	X 450	X 3.09	= 86,211	3
Increase use of clothes line	8% →	92	X 200	X 3.07	= 56,488	3
Install 10 CFLs	23% →	7	X 700	X 3.03	= 163,317	2
Install low-flow showerhead	61% →	39	X 215	X 2.5	= 20,963	3

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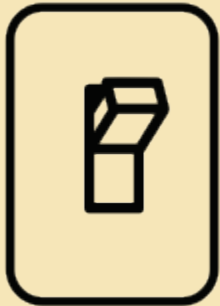
# Behavior Change Science



## Step 1



Audience



Behavior

## Step 2



Barriers



Benefits

## Step 3



Strategies

# Identifying Barriers/Benefits



- Research
- Observation
- Focus Groups
- Surveys

Specific Behavior	Barriers	Benefits
Encourage	↓	↑
Discourage	↑	↓

*What prevents your target audience from engaging in this behavior? What do they find challenging about it?*

*What does your target audience perceive as the benefit of engaging in this behavior? What do they like about it?*

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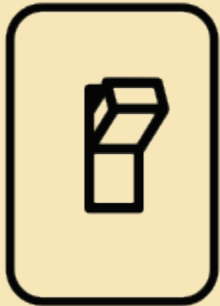
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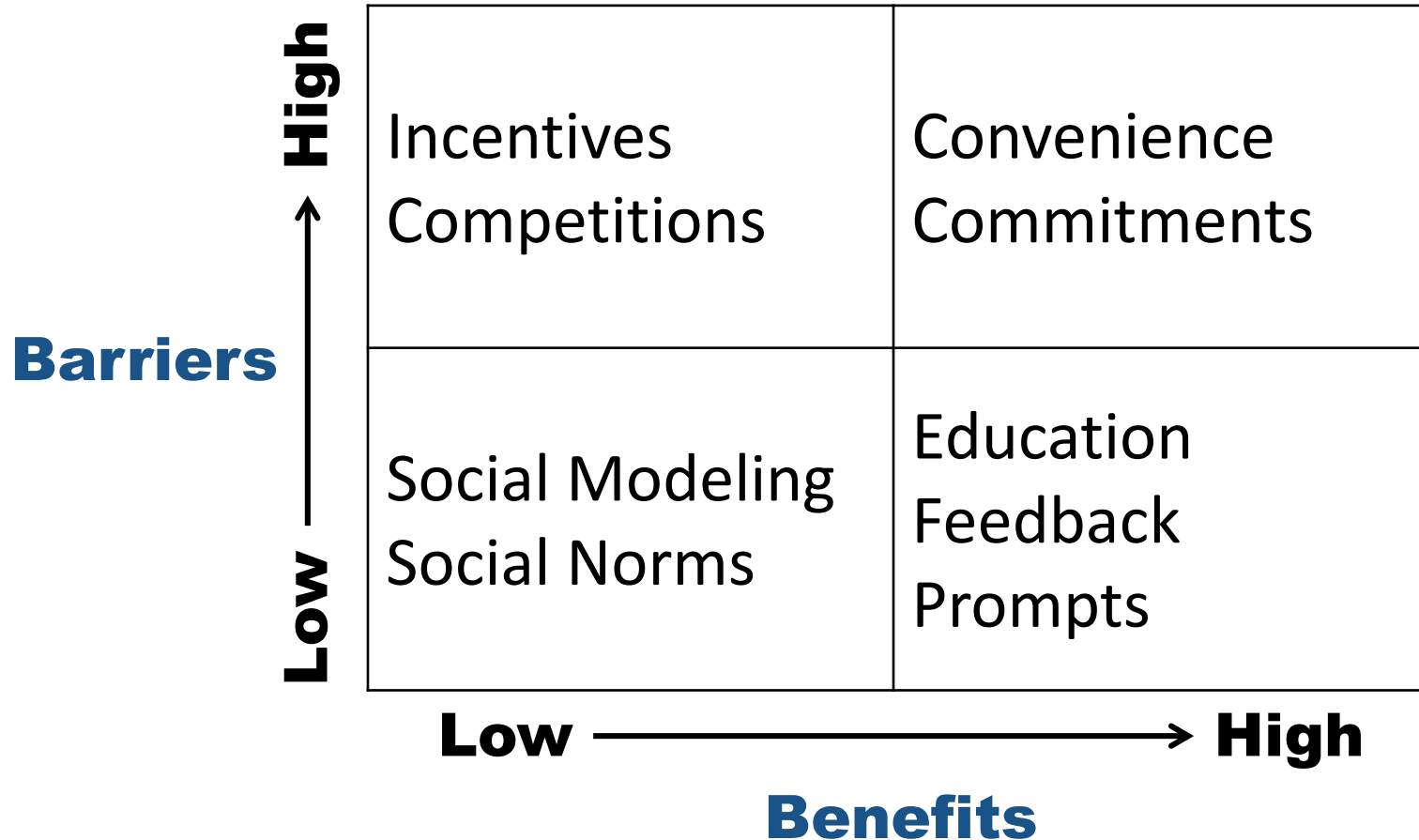
## Step 3



Strategies



# Select Key Strategies



# Stack Additional Strategies



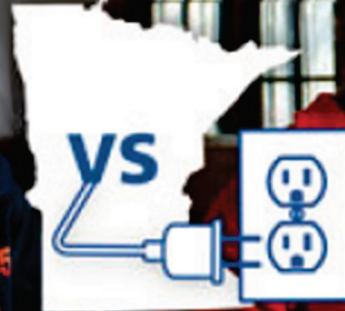
- Anchoring
- Authority
- Choice Architecture
- Commitment & Consistency
- Communication
- Follow-up
- Goal Setting
- Liking
- Reciprocity
- Scarcity
- Social Diffusion

# FAMILY ENERGY

## FACE-OFF



**MILL POND MINIMIZERS**



**PRAIRIE PENNY PINCHERS**

Competition

# Family Energy Face-Off



Goal Setting

SCORE: 198,585

Members: 201

Actions: 5,238



NEW LONDON, MN

MILL POND MINIMIZERS

# Family Energy Face-Off



## Social Diffusion

SCORE: 198,585

Members: 201

Actions: 5,238

### Mill Pond Minimizers : Team Members

Member	Actions	City	Stat
Abby F.	37	Minneapolis	MN
Aleta K.	20	Lanesboro	MN
Alexis T.	41	Minneapolis	MN
Allison K.	18	Minneapolis	MN
Amanda R.	42	Pennock	MN
Amy B.	23	Annandale	MN
Angela H.	33	Nisswa	MN
Anitra L.	51	Spicer	MN
Arthur N.	21	New Alondon	MN
Ashley W.	12	Willmar	MN
Audrey A.	45	Montevideo	MN
Barbara P.	29	Porter	MN
Beth F.	23	Willmar	MN
Beverly T.	37	Spicer	MN
Bob B.	15	Willmar	MN
Bob B.	15	Willmar	MN
Bob R.	29	Bird Island	MN
Brent M.	20	Lanesboro	MN



NEW LONDON, MN



MILL POND MINIMIZERS

### Team's top five actions:

1. 5 pts – Turn off lights at home when no one is in the room
2. 10 pts – Turn off the water when you brush your teeth
3. 15 pts – Use a reusable water bottle with tap water instead of purchased bottled water for a week
4. 10 pts – Turn TV off when no one is watching for a week
5. 5 pts – Use re-usable shopping bags at the store

# Follow-Up



- Reminder fatigue? Will people start tuning out?
- The brain has two systems. System 2 doesn't like reminders, System 1 doesn't notice reminders.
- Reminders work and you have to get very repetitive before people tune out.
- We get more sick of reminding than the audience is of being reminded.
- Gentle, Frequent, & Kind (energy needs a mother) backed by authority.

# Residents & RE Action



Choice  
Architecture

Sign-Up to get your energy from renewables!

WindSource



Cost

\$

Community  
Solar Gardens



-\$

Check back  
in 6 months

*So easy, in fact,  
sign-up now:  
[link]*

# Communication/Education



## Tips for Communicating Energy Tips:

- 1) Put People in Pictures
- 2) Tell People What to Do
- 3) Be Specific With Savings
- 4) Be Clear and Relatable
- 5) Show Savings, not Costs



For ideas, check out: <https://www.esource.com/adcontest-winners>



# Comm/Ed (Cont'd)



“The bathroom is the classroom of tomorrow.”

Videos are great too! Try [biteable.com](https://biteable.com)

Don't provide a laundry list – keep it short.

Go where your audience is. Don't expect them to come to you.

Humanize energy. Give it a character.

# GreenNYC



Social Modeling



Source: GreenNYC

# Place in close proximity



Source: GreeNYC

Prompts

# Local Gov't Solar Subscriptions



**Anchoring**

**Scarcity**

# Small Business Doorknocking



Liking

Reciprocity



# Saving Watts & Drops Bulk Buys



Falcon Heights Environment Commission is giving away 1,000 LED light bulbs.

The commission hopes that these bulbs will give residents a sense of the improved quality and cost savings of LED lighting so that many more residents adopt this environmentally-friendly lighting.

In exchange for this bulb, we ask that you commit to this pledge.



**I pledge to....**

*(initial here, twice)*



Replace one traditional, incandescent light bulb with this free trial LED light bulb by the end of this coming weekend.

\_\_\_\_\_

\_\_\_\_\_



Replace my entire home's lighting with LED by Earth Day April 22, 2018, if I liked this trial bulb.

\_\_\_\_\_

\_\_\_\_\_

Please remind me of my commitment at this email address:

\_\_\_\_\_

**Commitment & Consistency**

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# Take-Aways



- ✓ **Know your Peeps!**  
Understand your audience or get to know them better.
- ✓ **Pick one to start!**  
Identify a single behavior you want to influence.
- ✓ **Stack 'em up!**  
Use multiple strategies to affect barriers and benefits to the behavior.



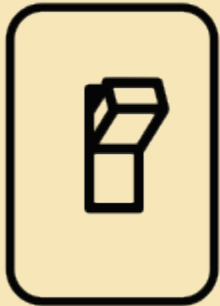
# Take-Aways



## Step 1



Audience



Behavior

## Step 2



Barriers



Benefits

## Step 3



Strategies

# Additional Resources



- Free online book

<http://www.cbsm.com>



- Behavior Energy & Climate Change Conference

<https://beccconference.org/>



- The Psychology of Sustainable Behavior

<https://www.pca.state.mn.us/sites/default/files/p-ee1-01.pdf>

