Smart Lighting:
New Opportunities for Multiple Benefits

2016 Northeast Residential Lighting Workshop
Tuesday, September 20th
2:50am-3:50pm
Background

• NEEP is looking at:

Energy Efficiency

IoT

Image credit: Inventrom
“We have our best minds on this...”
“We have our best minds on this...”

Dumber

Energy Savings?
Demand Response?
Equity?
Cost effective?

Smarter

• Basic control (hub & app)
• Color tuning (hub & app)
• Tuning for specific application
• Advanced functionality: app, no hub needed

Lamp Intelligence Continuum
Standby Power

- Recent press

Stand-by of “smart lamps” can be larger than their energy use for lighting

(ecee news, 06 Sep 16) “Smart” lamps combine technology breakthroughs in wireless communications with light emitting diodes (LEDs) to provide many exciting consumer benefits. However, the standby energy use of “smart lamps” can be larger than the energy used for providing lighting, according to a new report from the IEA 4E Solid State Lighting Annex issued today.

Smart lamps are an exciting new family of products which provide an opportunity for the consumer to benefit from smart services, better product quality and energy savings. Combining wireless communication, intelligent controls and light emitting diodes (LEDs), these lamps offer end-users features like colour tuning, dimming, changing lighting scenes, remote control, motion sensing control, daylight control and other features. But these features require energy even when the lamps are not providing light, but are instead waiting for a wireless instruction from a smartphone or remote control unit.

Policy makers concerned over lost savings

*Policy-makers who are looking at lighting products are concerned that
Standby Power

- Unchecked limits are a real concern
- ENERGY STAR sets .5W

<table>
<thead>
<tr>
<th>Starting Lamp Wattage</th>
<th>Standby Power (in both on and off modes)</th>
<th>Annual kWh (at 3 hours of use/day + 21 hours/day in just standby mode)</th>
<th>% Increase from no standby mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5</td>
<td>0W (not connected)</td>
<td>9.3</td>
<td></td>
</tr>
<tr>
<td>8.5</td>
<td>.2W</td>
<td>9.53 + 1.53 = 11.06</td>
<td>19%</td>
</tr>
<tr>
<td>8.5</td>
<td>.5W</td>
<td>9.86 + 3.83 = 13.69</td>
<td>47%</td>
</tr>
<tr>
<td>8.5</td>
<td>1W</td>
<td>10.40 + 7.66 = 18.06</td>
<td>94%</td>
</tr>
<tr>
<td>8.5</td>
<td>2W</td>
<td>11.50 + 15.32 = 26.82</td>
<td>188%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brand</th>
<th>Product</th>
<th>Wattage Equivalent</th>
<th>Color Tuning?</th>
<th>Standby Power</th>
<th>Efficacy</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFX</td>
<td>White 800</td>
<td>60</td>
<td>White light color tunable</td>
<td>~.5-.7W</td>
<td>81lpw</td>
<td>$39.99</td>
</tr>
<tr>
<td></td>
<td>Color 1000</td>
<td>75</td>
<td>RGB Color tunable</td>
<td>~.5-.7W</td>
<td>96lpw</td>
<td>$59.99</td>
</tr>
<tr>
<td>GE</td>
<td>C-Life</td>
<td>60</td>
<td>No, 2700K</td>
<td>~1W</td>
<td>73lpw</td>
<td>$70 for 4 bulb starter pack (2 C-Life, 2 C-Sleep)</td>
</tr>
<tr>
<td></td>
<td>C-Sleep</td>
<td>60</td>
<td>3 settings: AM at 7000K, Daytime at 3000K, and PM at 2000K</td>
<td>~1W</td>
<td>77lpw</td>
<td></td>
</tr>
<tr>
<td>Ilumi</td>
<td>Ilumi</td>
<td>60</td>
<td>RGB Color tunable</td>
<td>&lt;1W</td>
<td>~80lpw</td>
<td>$99.99 for 2 pack</td>
</tr>
</tbody>
</table>
Tips for Successful Smart Lighting

• Delighted customer
• Energy benefits outweigh costs
  – DR
  – DER
  – EE
  – Etc?
• And more...
Speakers

• Chris Lubeck, LEDvance
• Rene Burger, Philips
• Lisa McLeer, GE
• Jasmine Rivest, Efficiency Vermont
SYLVANIA Socket Survey 8.0 – Focus on Smart Lighting

Research on lighting topics including bulb use, LED knowledge, and smart lighting

Christopher Lubeck
Head – Utility Relations
LEDVANCE/SYLVANIA
Survey 8.0 Research Objectives

We commissioned this survey to uncover insights on the topic of LED and smart lighting – specifically consumer adoption, and behaviors and attitudes towards the technology. This research was designed to:

1. Explore the prevalence of LED lighting in homes;
2. Understand the home lighting purchase behaviors of consumers, including pain points, influencers, and future purchases; and
3. Gauge consumer awareness and interest levels of new "smart lighting" and other technologies.
4. Track changes in findings year over year to highlight trends.

Survey 8.0 - Background and Methodology

The Osram Sylvania Socket Survey has been conducted regularly since 2008. This document contains results from the 8th round of research. A new methodology and new questions were used in 2015-16 to explore the post-incandescent landscape. While comparisons to years prior to 2015 may be made in this report, those findings should be considered directional.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>Online survey</td>
<td>Landline and cell phone telephone survey</td>
<td>Landline telephone survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample Size</td>
<td>1,000 interviews</td>
<td>1,000 interviews</td>
<td>300 interviews (65 via cell)</td>
<td>305 interviews (65 via cell)</td>
<td>303 interviews (76 via cell)</td>
<td>309 interviews (77 via cell)</td>
<td>302 interviews</td>
<td>301 interviews</td>
</tr>
<tr>
<td>Sample (American adults, ages 18+)</td>
<td>Obtained via online panel</td>
<td>Obtained through random digit dialing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margin of Error (At 95% Confidence)</td>
<td>±3.1% for the entire sample</td>
<td>±3.1% for the entire sample</td>
<td>±5.7% for the entire sample</td>
<td>±5.6% for the entire sample</td>
<td>±5.6% for the entire sample</td>
<td>±5.6% for the entire sample</td>
<td>±5.7% for the entire sample</td>
<td>±5.7% for the entire sample</td>
</tr>
</tbody>
</table>

Note: throughout this report, the term “significance” refers to statistical validity and does not indicate importance or meaningfulness.
Survey 8.0 Research Objectives – Smart Lighting

Lighting is now one of the top 3 smart technologies Americans own

Since 2015, the number of consumers who own smart lighting grew 40%
Survey 8.0 Research Results – Smart Lighting

Approximately one quarter of Americans say it’s very likely they will buy smart thermostats, light bulbs, house alarms, or door locks the next time they need them. (The likelihood of buying smart appliances is somewhat lower.)

<table>
<thead>
<tr>
<th>Likelihood of Future Smart Technology Purchase</th>
<th>“Total Likely” 2016</th>
<th>“Total Likely” 2015</th>
<th>One Year Change (Bold: significant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermostat</td>
<td>26%</td>
<td>28%</td>
<td>55%</td>
</tr>
<tr>
<td>Light bulbs</td>
<td>25%</td>
<td>30%</td>
<td>55%</td>
</tr>
<tr>
<td>House alarms</td>
<td>23%</td>
<td>27%</td>
<td>49%</td>
</tr>
<tr>
<td>Door locks</td>
<td>22%</td>
<td>25%</td>
<td>47%</td>
</tr>
<tr>
<td>Small appliances, like a slow cooker</td>
<td>16%</td>
<td>23%</td>
<td>39%</td>
</tr>
<tr>
<td>Large appliances, like an oven</td>
<td>16%</td>
<td>23%</td>
<td>38%</td>
</tr>
</tbody>
</table>

Q17. When you next need to replace them, how likely or unlikely are you to buy smart versions of each of the following technologies? (n=1000)
Survey 8.0 Research Results – Smart Lighting

More than 60% of Americans believe smart lighting fits their lifestyle.

4 out of 5

Americans say there is space in the home that could benefit from smart lighting.

55%

of consumers say they’re likely to purchase smart lighting when they need new bulbs.

Likely to purchase smart lighting next time they buy new bulbs:

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those who get lighting info from the internet</td>
<td>68%</td>
</tr>
<tr>
<td>Already own LEDs</td>
<td>61%</td>
</tr>
<tr>
<td>Are under age 35</td>
<td>63%</td>
</tr>
</tbody>
</table>
While longevity and brightness were most important for LEDs and all bulbs in general, **price jumps to the top of the list of influences for smart bulb purchases.**

### Influence of Smart Lighting Features on Purchase

<table>
<thead>
<tr>
<th>Feature</th>
<th>“Total Influence” 2016</th>
<th>“Total Influence” 2015</th>
<th>One Year Change (Bold: significant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price of the light bulb</td>
<td>60%</td>
<td>25%</td>
<td>85%</td>
</tr>
<tr>
<td>Life span of the light bulb</td>
<td>60%</td>
<td>25%</td>
<td>85%</td>
</tr>
<tr>
<td>Ability to turn on and off remotely</td>
<td>40%</td>
<td>32%</td>
<td>72%</td>
</tr>
<tr>
<td>Compatibility with other home automation technologies</td>
<td>34%</td>
<td>32%</td>
<td>67%</td>
</tr>
<tr>
<td>Ability to create lighting schedules</td>
<td>30%</td>
<td>34%</td>
<td>64%</td>
</tr>
<tr>
<td>Dimming capabilities</td>
<td>27%</td>
<td>34%</td>
<td>61%</td>
</tr>
<tr>
<td>For white lights, ability to change color from warm to cool</td>
<td>27%</td>
<td>32%</td>
<td>59%</td>
</tr>
<tr>
<td>For colored lights, ability to change color</td>
<td>20%</td>
<td>27%</td>
<td>47%</td>
</tr>
</tbody>
</table>

A great deal of influence ■ Some influence

Q19. When thinking about smart light bulbs, how much influence would the following features have in your decision to buy one? (n=1000)
Survey 8.0 Research Results – Smart Lighting

Four in five Americans believe at least one room in the home would benefit from smart lighting technology. Living rooms and kitchens are most commonly seen as benefiting from such lighting. Eighty-six percent of those under age 35 say any room would benefit, compared to 72% of those age 55 or older.

Q18. Which of the following rooms, if any, do you think would benefit from utilizing “smart” lighting solutions? (n=1000)
Survey 8.0 Research Results

Americans rely most on in-store displays and packaging when considering light bulbs. Compared to 2015. Consumers are more often learning via websites and consumer reviews, and less often via traditional news media.

Information Sources for Light Bulb Purchases

<table>
<thead>
<tr>
<th>Source</th>
<th>2015</th>
<th>2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-store displays/employees</td>
<td>43%</td>
<td>42%</td>
<td>-2%</td>
</tr>
<tr>
<td>Product packaging</td>
<td>36%</td>
<td>39%</td>
<td>+8%</td>
</tr>
<tr>
<td>Friends/family</td>
<td>30%</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Electricity provider</td>
<td>18%</td>
<td>18%</td>
<td>0%</td>
</tr>
<tr>
<td>Retail websites</td>
<td>12%</td>
<td>16%</td>
<td>+33%</td>
</tr>
<tr>
<td>News media</td>
<td>20%</td>
<td>15%</td>
<td>-25%</td>
</tr>
<tr>
<td>Manufacturer websites</td>
<td>9%</td>
<td>13%</td>
<td>+44%</td>
</tr>
<tr>
<td>Social media/blogs</td>
<td>6%</td>
<td>8%</td>
<td>+33%</td>
</tr>
<tr>
<td>Expert reviews</td>
<td>19%</td>
<td>20%</td>
<td>+5%</td>
</tr>
<tr>
<td>Consumer reviews</td>
<td>14%</td>
<td>19%</td>
<td>+36%</td>
</tr>
</tbody>
</table>

Italics: statistically significant change from 2015 to 2016

Q13. Where do you get your information about what light bulbs to purchase? (n=1000)
Snapshot of Key Findings

Smart Technology

- Most consumers have heard of smart technology, especially thermostats, alarms, lighting, and locks. A smaller but growing number are familiar with smart appliances.
- Despite awareness, purchases are less common: less than one third of consumers have purchased smart technology of any kind.
- Still, consumers see advantages of smart technology for many spaces in the home, and only a small minority say homes would not benefit at all.

Smart Lighting

- Most consumers think smart lighting will eventually replace regular light bulbs, and the intensity of that belief ("strongly agree") has grown noticeably since last year.
- More than half of consumers also believe smart lighting fits their lifestyle, and similar growth in the intensity of belief is evident.
- However, few consumers have ever purchased smart lighting, suggesting that Americans see a trend coming but have not personally adopted it.
- Price and lifespan are the two top influences on smart lighting purchase decisions. In the case of bulbs in general, price was the third-strongest influence, suggesting that cost is a stronger concern for smart lighting in particular.
Questions?

Rene Burger
Senior Marketing Manager
Rene.burger@philips.com
Philips Hue is now ENERGY STAR Qualified!

Meet Philips Hue White products:

- Philips Hue White Starter A19 Kit
- Philips Hue Wireless Dimming Kit
- Philips Hue White A19 LED bulb

- $79.99
- $39.99
- $14.99

Includes 2 soft white A19 LED bulbs and 1 Hue Bridge
Includes 1 soft white A19 LED bulb and a dimmer switch
Includes 1 soft white A19 LED bulb

Rebates range from $3-$7 per light bulb

Look for announcements in October 2016...
MEET hue NOW Products
Hue White
Automate your lights

What’s in the box:

- Comfort dimming - control via app with a full range of white light
- Light Schedules - make it seem like you’re home when you’re not
- Away-from-home control - control lights wherever you are

455287 Starter Kit (2): $69.99
455295 A19 Bulb: $14.99
Hue Wireless Dimming Kit

What’s in the box:

Installation free dimming - no re-wiring
Place switch anywhere
Upgradable to hue ecosystem with bridge

455386 Dimming Kit: $34.99
Hue White Ambiance

Light for your Moments

Feel good waking up and sleep soundly at night everyday
Turn each routine at home into perfect moments of yours
Be creative with your home and enjoy decorating it with different styles

What’s in the box:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>460989 Starter Kit (2)</td>
<td>$129.99</td>
</tr>
<tr>
<td>461004 A19 Bulb</td>
<td>$29.99</td>
</tr>
<tr>
<td>464438 BR30 Bulb</td>
<td>$29.99</td>
</tr>
</tbody>
</table>
Hue White and Color Ambiance

Limitless Possibilities

What’s in the box:
- Turn on your imagination - sync with music, movies, and games
- Paint with light – choose from 16 million colors to match your mood

456194 Starter Kit (3): $199.99
456202 A19 Bulb: $59.99
Hue Lightstrip Plus

Ultimate Flexibility

**Ultimate flexibility** - shape, bend and extend

**Paint with light** - 16 million colors with all shades of white

**Extendible up to 10 meters** – 2 meter base with 1 meter extensions

800276  2M Base:  $89.99
800268  1M Extension:  $29.99
Hue Go
Take your light anywhere

**Portable wireless light** - most versatile light in your home

**Paint with light** - 16 million colors with all shades of white

**Control your way** – activate light settings directly by pressing the smart control on the product or hook up to bridge for full Hue Control

798835 Hue Go: $79.99
Never more than 1 tap away from your daily controls with our new intuitive menu
App 2.0 Key Features

- Settings
  - Hue bridges
  - Room setup
  - Lights setup
  - Siri voice control
  - Switch setup
  - Feedback
  - About

- Home Dashboard
  - Living Room
  - Kitchen
  - Bedroom
  - Kids Bedroom

- Routines
  - Home & Away
  - Waking Up
  - Going to sleep
  - Personal Routines
  - Other

- More
MEET hue NOW Partners
Partnerships
Enhancing the value of hue
Philips Hue + IFTTT

If \( \text{Q} \) then hue

When Amazon Echo/Alexa timer hits 0, blink Hue lights

by boucaner  7.0k  99

If ESPN then hue

Flash lights with every in-game update for your favorite team

by duke_reb  9.8k  296

If \( \text{NASA} \) then hue

Change color of lights when space station flies over a location.

by skytrend  5.8k  221

If then hue

Turn the lights on when I get up

by galactichero  1.7k  183

If then hue

If it begins to rain then change the light colors to blue

by hue  39k  1.8k
MEET hue NOW
In Store Display
Hue in Bestbuy
C by GE

NEEP Summit September 20, 2016
Lisa McLeer
Marketing Manager, Utilities
Live the good light.

Meet C by GE. The right light for everything you do.

Life and Sleep.
A complementary pair of bulbs for a full life.

Life provides superior light quality. Brightness can be easily adjusted for working or reading, or in the kitchen and bathroom. Sleep is specially developed for the bedroom, creating a calming environment at night, and energizing environment in the morning.
The right light transforms how a space looks and how you feel.

But when it comes to lighting your home, where to begin is anyone's guess. While traditional light bulbs provide different kinds of light and brightness, the options are overwhelming and the result is underwhelming.

We make it simple to get the light you need, enhancing every way you live.

With the power of LED technology, C by GE is able to create a more finely tuned, adjustable light. This leads to optimal quality bulbs that work in more situations, so there are fewer choices with better results.

Life and Sleep.
A complementary pair of bulbs for a full life.

Life provides superior light quality. Brightness can be easily adjusted for working or reading, or in the kitchen and bathroom. Sleep is specially developed for the bedroom, creating a calming environment at night, and energizing environment in the morning.

No hubs, wires, or plugs. Simple to purchase, connect, and control.

Controlled by Bluetooth through our App on your smartphone or tablet, C by GE allows you to build a smart home effortlessly. Through our immersive, e-commerce site, buying light bulbs is simple, engaging and fun, with bulbs arriving to your door in innovative and informative packaging.
Lighting and Sleep

Lighting and sleep

Did you know lighting can affect your sleep patterns?

Did you know? 50–70 million adults suffer from chronic sleep issues

Get better sleep

Avoid taking long naps
Set a consistent routine
Stop caffeine intake by noon
Keep pets out of your bed

Light detected by our eyes affects melatonin levels

Blue light suppresses melatonin

Amber light at night doesn’t suppress melatonin to help you fall asleep

It’s a new age of illumination

Light can strengthen our circadian clock, like a biological clock
Electrolyte and character devices can disrupt our natural circadian rhythm

Effects of melatonin suppressive environments last for years
Lighting patterns that mimic natural light help our ability to maintain our natural sleep-wake cycle

Promote the body’s natural sleep-wake cycle without medical or tech aids.
Life vs. Sleep

**Lighting Facts** Per Bulb

<table>
<thead>
<tr>
<th>Brightness</th>
<th>800 lumens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Yearly Energy Cost</td>
<td>$1.32</td>
</tr>
<tr>
<td>Based on 3 hrs/day, 11c/kWh</td>
<td></td>
</tr>
<tr>
<td>Cost depends on rates and use</td>
<td></td>
</tr>
<tr>
<td>Life</td>
<td>22.8 years</td>
</tr>
<tr>
<td>Based on 3 hrs/day</td>
<td></td>
</tr>
<tr>
<td>Light Appearance</td>
<td>Warm → Cool</td>
</tr>
<tr>
<td>Energy Used</td>
<td>11 Watts</td>
</tr>
</tbody>
</table>

**C-Life**

You do a lot of different things throughout the day, so you need different kinds of light. C-Life makes it simple to get the optimal light at every moment - all from one light bulb.

- Dim or brighten instantly
- Group & control multiple bulbs

**C-Sleep**

There's nothing more important than sleep. And if it all starts with creating the right environment. C-Sleep creates the perfect bedroom light - warm and calm at night, crisp and vibrant in the morning.

- Dim or brighten instantly
- Group & control multiple bulbs

---

Confidential. Not to be copied, distributed, or reproduced without prior approval.
HGTV – DIY’s I Want That at the 2016 National Hardware Show premieres Saturday, July 30, at 1pm ET, then encores on HGTV on Thursday, August 4, at 8am ET

Olympics - The world has come to know C by GE through six USA Olympic athletes. Followers are able to hear firsthand from world class athletes how they value sleep and use C by GE to support their own sleep cycles.
C by GE Media Mentions

**Men's Journal** (2.73M UMV)

**Fast Co** Innovation by Design Award – Finalist in Health Category -- https://www.fastcodesign.com/product/c-by-ge

Squinting at screens is tough on the eyes, and the blue light emitted by our mobile devices can disrupt sleep. C by GE is a pair of smart LEDs, called C Sleep and C Life, that change brightness to suit the time of day and mimic more subtle hues of natural light, to help our bodies adjust back to more organic rhythms and produce melatonin more effectively. They won't help wear you off your phone, but these Bluetooth-connected, app-powered bulbs will help ensure that the time you spend awake—and asleep—is healthy and productive.

**CNET** (8.5M UMV)

**PC Mag** (4.6M UMV)
LIGHTIFY®
Smart Connected Lighting

Christopher Lubeck
Head – Utility Relations
LEDVANCE/SYLVANIA
LIGHTIFY® - Vision

- Smart switches
- Smart outdoor and night vision cameras
- Smart blind control
- Smart door sensors
- Smart thermostat
- Smart gateway
- Smart motion detectors
- Smart window sensors
- Smart door phone
- Smart door locks
- Smart plugs
- Smart lamps
**Platform Overview**

- “Wire free” gateway that connects to your home router or cable modem over WiFi
- Mobile App connects to the gateway via WiFi or cell connection to control lights, groups, and scenes
- Gateway connects to the LIGHTIFY products using ZigBee (maximum of 50 devices per gateway)
- Gateway and cloud API’s to allow developer access

**Differentiators**

- Simple to setup groups and scenes designed to provide functional and automated home lighting
- Broad portfolio of smart lamps, luminaires, and components
- Products for both indoors and out
- ZigBee sensors/switches to augment the mobile app
- Widest color temperature ranges in the industry, 1900K candle light up to 6500K daylight
LIGHTIFY® - Today

- A19 Tunable White
- RGBW Flex/EXP
- RT 5/6 RGBW
- A19 RGBW
- BR30 OFD
- Gardenspot Mini RGB
- Gateway
- BR30 RGBW
- Dimming Switch

Phase 2 (September ’15)

Phase 1 (Jan ’15)

Phase 3 (November-December ’15)

- RT 5/6 TW
- A19 OFD
- BR30 TW
LIGHTIFY®

**Better**

Function: on/off/dim  
Uses: basic wireless lighting, safety & security applications, provides grouping across several electrical circuits  
MSRP: $15-$39

**Best**

Function: High CRI tunable white (TW)  
Uses: personalized color temperature, “one size fits all” white choice, circadian tuned scheduling  
MSRP: $29-$39

**Premium**

Function: high CRI full color + tunable white (RGBW)  
Uses: High quality white, experiential/mood lighting, entertainment & theater, outdoor decorations, party lighting  
MSRP: $39-$49

---

**Key Points**

- SYLVANIA treats its' LIGHTIFY products as quality LED lights first, connected second  
- All LIGHTIFY lights are full 60W equivalent or higher, and do not compromise on colors  
- SYLVANIA offers a full portfolio of cost effective indoor and outdoor lighting products
LIGHTIFY® In Use
LIGHTIFY® - Fall 2016

Phase 1
- Under cabinet bars tunable white
- Outdoor rated RGBW Flex, ~80 ft
- Motion/generic sensors
- Universal voltage RGBW downlight
- Generic fixtures: on/off/dim and tunable white

Phase 2
- Flushmount tunable white
- Ultra thin surface light tunable white
- LIGHTIFY Plug
- Outdoor PAR38 on/off/dim
LIGHTIFY® In Use
Questions

LIGHTIFY Light Sources Currently Work With:

1) Nest
2) Amazon Echo
3) Logitech
4) Lutron

SmartThings
Wink
Wemo
Smart Lighting & Smart Hub DIY Install

REPORT ON A
2015 Efficiency Vermont R&D Project

Jasmine Rivest
Program Manager
Enter: Smart Lighting

How viable is it for an EE program?

• Map the baseline energy use of smart lighting
• Understand participants’ “out of the box” experience with installation & use

The Study

• 15 homes: 5 smart bulbs | 5 regular bulbs
• Light loggers measuring Hours of Use (HOU)
What did we find?

Nota Bene: The 15 home sample-size is not statistically significant. Further study is warranted to verify these results.

Smart bulb projected annual HOU

• Close to or less than 1,000 hours/year
• Less than our standard lighting program HOU

Compared to standard / non-smart bulbs in Northeast Residential Lighting (NRL) study

• Up to 27 % reduction in HOU with smart bulbs
Other Program Considerations

No statistically significant HOU difference in:

Homes that Regularly Used Automation
- Opportunity for Efficiencies in Scheduling

Manufacturer’s Ecosystems
- Program could be scaled across manufacturers assuming strict selection criteria
Old Dog, New Tricks?

Unexpected Use Cases

- Remote control of single bulb in circuit
- Correcting for inopportune switch placement
The Dimming Opportunity

Smart bulbs make dimming possible where none had existed before.

- In the average home: 10% of bulbs are on dimmer switches

Participants dimmed bulbs 38% of the time

- Additional energy saving opportunity beyond Hours of Use (HOU) alone
Where do we go from Here?

In an ideal set-up, with major industry barriers removed...

- Installation experience – not a major blocker
- Indicates viability for a retail program

Given this price point, would you recommend?

- **87%** Smart Bulb
- **80%** HEMS Hub

At $15 / bulb, cost not a barrier.
The Road Ahead

• Promising initial results for smart bulb HOU compared to non-smart bulbs. Further study needed.
• Significant opportunity for dimming
• With major industry barriers removed, participants were largely able to self-install
  – Potential for retail program with careful product selection
Thank you!

Jasmine Rivest
JRivest@efficiencyvermont.com
802-540-7651

Find the Full Report Here:
www.efficiencyvermont.com/news-blog/whitepapers
Discussion

• How can smart lighting get incorporated into program plans?
• Is there verifiable energy savings from smart lighting?
• Can the benefits outweigh the costs?
• Where will these prices go?
  – Will a smart lighting program be cost effective?
• Opportunities without a hub?