



# **Connected Appliances: Charting Progress and Identifying Consumer Value, Part II**

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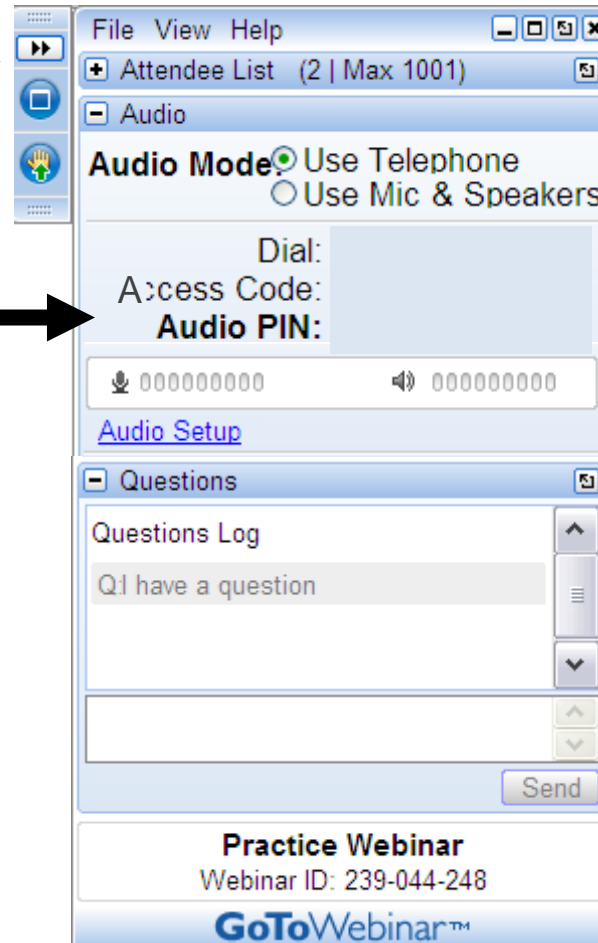
**Roadmapping Webinar  
April 7, 2016**

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## Using GoToWebinar cont.





## Appliance Roadmapping Goals

- Build on more than 20 years of partnership to foster the future success of the ENERGY STAR program for appliances
- Look ahead creatively to the next five years, with the goal of maintaining an ENERGY STAR appliance program that delivers on consumer expectations for performance and efficiency
- Establish pathways to further engagement between EPA ENERGY STAR, appliance manufacturers, retailers and energy efficiency program sponsors on an ongoing basis
- *Charting progress and identifying consumer value of connected functionality*

## ENERGY STAR Connected Criteria



- Our goal: Use ENERGY STAR connected criteria to leverage the national platform that utilities can rely on and consumers look for.
  - ENERGY STAR criteria provide consistent definitions and approaches, a consistent set of starter functionality, and an emphasis on open standards.
  - ENERGY STAR is a trusted resource that can help consumers find these connected products and identify the benefits they offer.



## Agenda for Today's Webinar

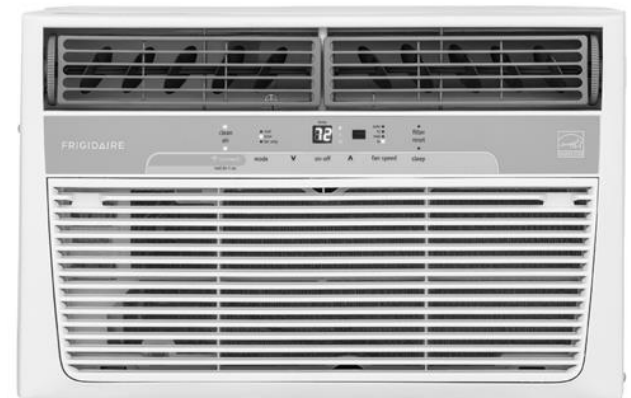
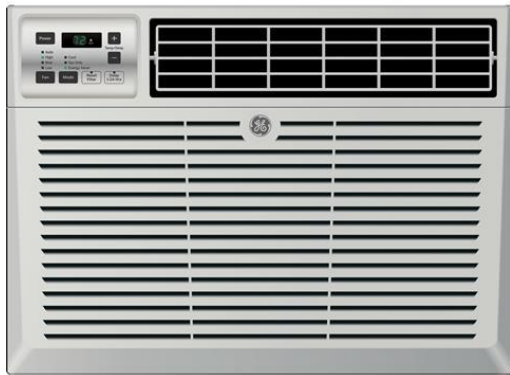
- Overview and discussion of working group topics
  - Room Air Conditioners
  - Kitchen Appliances
  - Consumer Messaging
- Next steps for connected appliance roadmapping



# Room Air Conditioners

## Connected Room Air Conditioners Today

- 2016 – the year of Connected Room Air Conditioners
  - Multiple ENERGY STAR models under at least five brands
  - 4 ENERGY STAR connected models from 3 manufacturers





## Energy Benefits of Connected Room Air Conditioners



- **Grid Load Balancing** – DR enables utilities to better manage peak demand
- **Increase Penetration of Renewable Generation** – connected room ACs can adjust their usage based on price or in response to signals that can increase utilization of clean, renewable energy
- **Energy Savings** – no need to let it run all day; turn it on when you are headed home
- **Save \$** - monetary benefits accrue when consumers:
  - Reduce usage in peak price periods, or
  - Enroll in DR

## ENERGY STAR Connected Room Air Conditioners



- Overview of Optional Connected Criteria
  - Open-standards communications
  - Application Programming Interface (API)
  - Messages related to energy consumption
  - Energy consumption reporting
  - Smartphone control
    - Save energy when at work or vacation
    - Turn on the Room AC on the commute home, rather than leaving it on all day

## ENERGY STAR Connected RACs are Smart Grid Ready



Demand Response (DR) – used by utilities to balance summer peaking

- Delay Appliance Load (DAL) – set temperature increased by  $\geq 4^{\circ}\text{F}$  for at least 4 hours
- Temporary Appliance Load Reduction (TALR) – compressor disabled for 10m

- Providing Grid benefits while limiting consumer impacts
  - 85°F limit for Demand Response
  - No more than (1) DAL and (3) TALR responses per day
  - DR Override – If consumers get too hot, they can ***always*** override



# Connected Room AC Utility Programs

**coolNYC**  
A Con Edison program in partnership with ThinkEco | Check coolPoints | Check Your Enrollment Status | Contact

Home About Sign Up Support

## Join coolNYC to keep your neighborhood cool this summer

Control your air conditioners from anywhere, save money and energy, and earn rewards!

**I'm new**  
Sign up for 2016

**Returning participant**  
Reconnect your equipment

**Check my status**  
I already signed up

**ComEd** powering lives  
An Exelon Company

HOME SIGN UP ABOUT FAQs

## Earn Credits on Your Electric Bill with Peak Time Savings

**cps** works for you  
Check my enrollment status Customer Support

## COOL ENERGY PROGRAM

Home About Sign Up

**Click to sign up now**  
Get up to 3 free smartAC kits!

**Already have a smartAC kit?**  
Click for quick and easy set up tips. You can get a \$30 rebate again this year!

**Stay connected**  
Control your window AC using your smartphone.

[Learn more](#)

**coolControl** | nationalgrid Contact Us

Home About Sign Up Support

### Ways to Participate

- Get a smartAC Kit for your A/C
- Get a Sensi WiFi Thermostat
- Use your Friedrich Kühl
- Use your Frigidaire Cool Connect

### Find out more

- How do I qualify to be in the program?
- Saving money and energy
- What are Conservation Events?
- Where do I sign up for a free kit?

**Cool off with our coolControl A/C program**

[Learn more](#)

Use our smartAC kit to control your air conditioner from your phone.

Collect a \$30 gift card for every kit you successfully set up

[Smart control for your A/C](#)

[Earn rewards for participating](#)



# Case Study – ConEd CoolNYC

- HOME
- CUSTOMER CENTRAL
- BUSINESS CENTER
- ENERGY EFFICIENCY
- INVESTORS
- COMMUNITY
- NEWS
- ABOUT
- CONTACT

## RESIDENTIAL

- MY ENERGY CALCULATORS
- PROGRAM SEARCH

Join us on: [LinkedIn](#)

### RESIDENTIAL PROGRAMS

Contact us at 1-877-870-6118

#### YOU MAY ALSO QUALIFY FOR

Rebates of up to \$1000 to replace your old cooling or heating system

A \$50 reward to let us pick up your old freezer or refrigerator

Remotely control your central A/C with a free smart thermostat

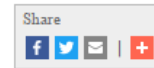
Rebates up to \$75 for new high efficiency appliances

Get an \$85 rebate for your thermostat

Remotely control your room A/C and earn rewards

## Outsmart the Heat with Smarter A/Cs

Take control of the temperature in your home even when you're not there. Try a smart A/C kit that connects to any window or wall A/C with our coolNYC program - or sign up with your already Wi-Fi-ready room A/Cs.



#### You'll be able to:

1. Turn on your A/C while headed home.
2. Control the temperature when you're out and your pet is at home.
3. Monitor in real time how much energy your A/C is using and see how you can save.
4. Earn rewards – by participating in the program during extreme heat.
5. Keep your neighborhood cool.

Join Now

## How would you like to participate?

Click the box that best describes you

I DON'T HAVE A WI-FI ENABLED AC

SIGN UP FOR A  
SMARTAC KIT



SIGN UP FOR  
2016

I HAVE A WI-FI ENABLED AC

MY AC IS  
WI-FI ENABLED



SIGN UP FOR  
2016



# Kitchen Appliances

## Kitchen Appliances – Connected Refrigerator

- Potential energy and non-energy benefits and consumer lifestyle interests
  - Overall connected refrigerator



- Look in the fridge without opening the door
- Remote temperature adjustment
- Delay defrost
- Delay ice maker cycles
- Fewer car trips to grocery store, managing food expiration to minimize food waste, order groceries from app



## Kitchen Appliances – Refrigerator Door Opening

- Look in the refrigerator without opening the door



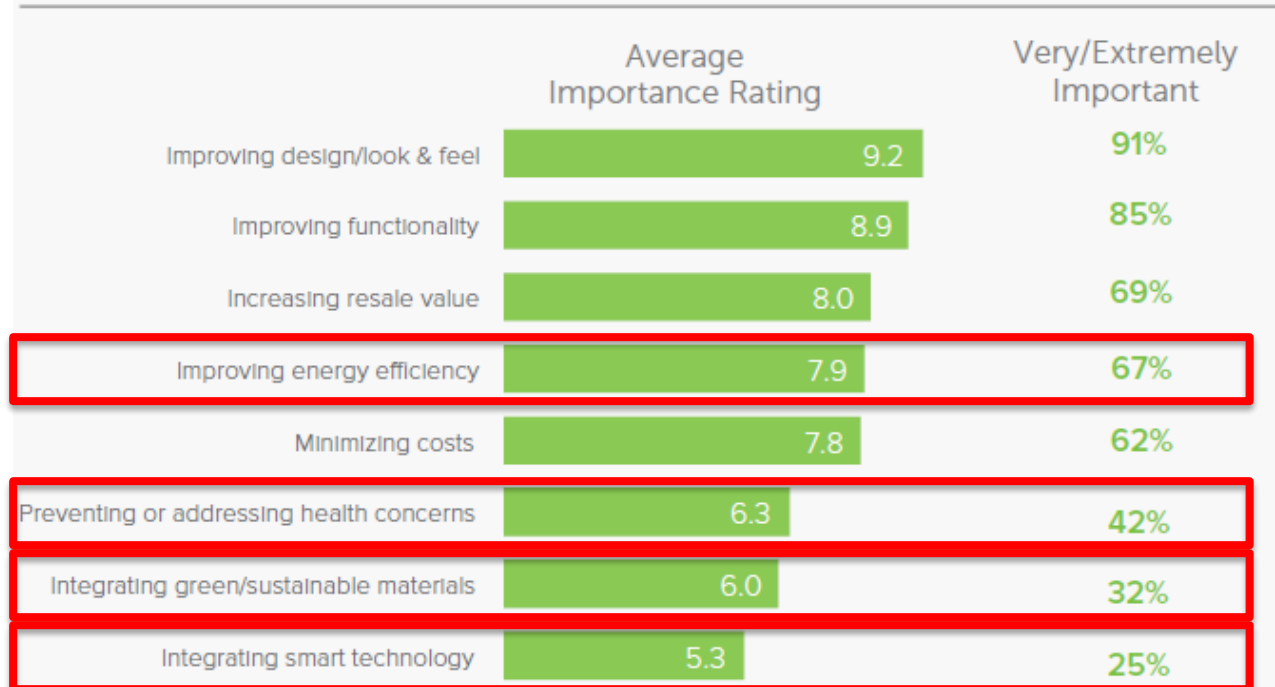
- Data
- Studies
- Forum
- Expansion to exploring potential energy and non-energy benefits and consumer lifestyle interests
- Expansion to exploring other connected features of refrigerators
- Expansion to exploring the kitchen suite



## Home Renovation

- Design and functionality motivations drive home renovation
- Resale (69%), costs (62%) and energy efficiency (67%) are strong considerations
- Consumers rate health, green and smart technology 25-42% as very to extremely important

IMPORTANCE OF RENOVATION CONSIDERATIONS AMONG HOMEOWNERS WHO RENOVATED

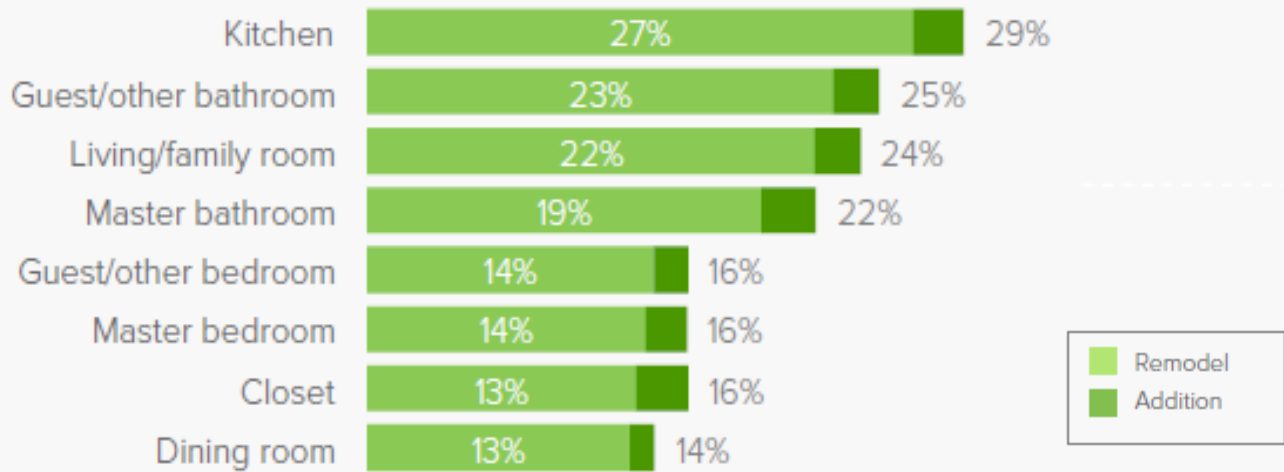




# Kitchen

- Top interior room for renovation is the kitchen
- General consumer mindset – the heart of the home is the kitchen
  - Gathering place for meal enjoyment, entertainment, socializing and can be a quiet space for individuals to reflect

FREQUENCY OF TOP INTERIOR REMODELS/ADDITIONS AMONG HOMEOWNERS WHO RENOVATED



## Kitchen Appliances – Entire Suite

- Work group to share and summarize potential energy/non-energy benefits and sources, prioritize list of most promising features/programs that the group identifies to further explore and develop in the kitchen space



- Refrigerator
  - Door openings, fewer trips to grocery, food expiration, order groceries
- Dishwasher
  - Delayed start, choose cycles, adjust drying times, load reduction/shift
- Oven / cooktop
  - Turn-off, pre-heat, cook to specific temp, recipe and cooking tips
- Coffee maker



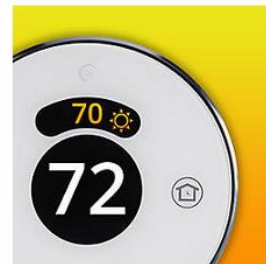
# Consumer Messaging

## Consumer Messaging on Connected

- What are the barriers to consumer understanding of connected?
  - Mind space to learn
  - Privacy
  - Data security
  - Emotional value, appeal
  - Types of benefits
  - Other?
- What messaging is resonating with consumers?
  - Opportunity to collaborate to rise the tides for all boats

Smart technology, simple solutions.

From wireless, streaming entertainment, media and devices; to smart thermostats, home security and wifi baby monitors; to fitness trackers, smart watches and wearables, Sears Connected Solutions has the cutting-edge home automation products and services to streamline your routine, save you money and put control in the palm of your hand. Smart Made Simple.





## Current ENERGY STAR Resources on Connected

ENERGY STAR Certified

### Residential Refrigerators

Visit the [Residential Refrigerators](#) page for usage tips and buying guidelines.

#### Filter Your Results

20 Records Found

So  
A

filter by keyword

#### Type

- Top Freezer (227)
- Bottom Freezer (424)
- Side-by-Side (66)
- Freezerless and Single Door (30)
- Compact (527)

#### Additional Features

- × Clear selections
- Thru the Door Dispenser (198)
- Automatic Defrost (1012)
- Connected (20)**
- Icemaker (482)
- Built-in (112)
- Counter Depth (350)

- Qualified product list
- Product finder
  - Product finder would indicate connected Y/N
  - Results of a product finder search would include “connects using” (e.g., Wi-Fi)
- (3) additional fields, on QPL advanced view
  - **Connects Using:** Wired Ethernet, Wi-Fi, Zigbee, HomePlug Green PHY
  - **Communication Standard Application Layer :** SEP 1.x, SEP2.x, OpenADR
  - **Direct on-premises Open-standard Based Interconnection** – Yes/No



## Other ENERGY STAR Resources

- What other ENERGY STAR resources can the EPA team explore further to support on the connected front?
- [www.energystar.gov/marketing\\_materials](http://www.energystar.gov/marketing_materials)
  - Messaging
  - How-to, tips, overview guides, flyers
  - Infographics
  - Website, webpage
  - Social media graphics, copy
  - Ask the Expert video, blog
  - Training material
  - Seasonal campaign
  - Linking partners





## Connected Appliances – Future Opportunities

- Realize the IoT vision of connected “things” doing really smart things by working together
  - Pool Pump monitors weather conditions, water quality and pool usage to dynamically minimize energy use
  - Connected Thermostat maintains comfort but minimizes energy use thru access to weather data, integration with the alarm system and, access to geo-locational services
  - Integration with other connected devices – when the alarm is armed, all connected devices go into a low-power mode
  - Dishwasher/Clothes Washer – communicates projected hot water usage to enable optimization of hot water generation
  - Intelligent management of energy storage and rooftop solar

## Next Steps in the Connected Roadmapping Process



- Further engagement between EPA ENERGY STAR, appliance manufacturers, retailers and energy efficiency program sponsors
  - Spring - Summer working groups



## Contacts

### Connected Appliances:

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*Thank you for participating!*

*Check for updates on the  
[Appliance Roadmapping  
web site](#)*