



ACEE Market Transformation Symposium 2017

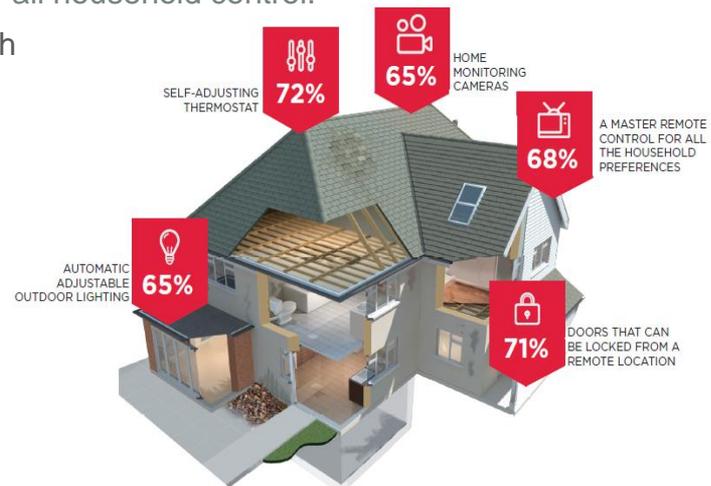
Energy Efficiency as a Distributed Energy
Resource: Implications for Program Design,
Customer Engagement, National Platforms, and
EM&V

Taylor Jantz-Sell

ENERGY STAR Intelligent Efficiency Strategy Coordinator

Energy Efficiency is Emerging as a Key Driver in Connected Homes

- Some of the most desired smart devices are: thermostats, door locks, lighting, monitoring cameras, and a master remote for all household control.
 - Motivations: Security is a key driver with 90% consumer agreement, yet others are emerging:
 - 70% are excited about cost savings from **energy efficiency**
 - Nearly 50% list helping the **environment** as a key feature of a smart home
 - Nearly 50% motivated by the potential to programming home settings and schedule maintenance



Source: State of the Smart Home Report, Icontrol Networks, 2015.

ENERGY STAR and Connected: The Consumer is Key

- Offer consumers new functionality that can enable immediate energy savings and convenience opportunities such as:
 - receiving a message that your refrigerator door didn't close;
 - receiving a message there is a performance issue with your clothes washer and enabling a service center to make an initial assessment of the problem remotely and come prepared with necessary parts;
 - being able to turn on the room AC before returning home;
 - learning how much energy you might save from lowering your room AC's setting a few degrees
 - controlling lights remotely
 - dimming lights without having to install a dimmer



ENERGY STAR and Demand Response: The Consumer is Key

- Help to ensure the **consumer** is being considered on the product side of smart grid deployment (e.g., ensuring consumers have the ability to override any response); and
- Encourage manufacturers to begin to offer products with future-oriented demand response capabilities that could support a reliable, lower emissions electric grid (e.g., enabling greater penetration of variable renewable energy sources).





ENERGY STAR Unique Position

- ENERGY STAR optional criteria leverage the national platform that utilities can rely on and consumers look for, bringing together interested partners and stakeholders.
- ENERGY STAR criteria provide consistent definitions and approaches: an emphasis on open standards, test methods for DR functionality.
- ENERGY STAR is a trusted resource that can help consumers find these connected products and identify the benefits they offer.

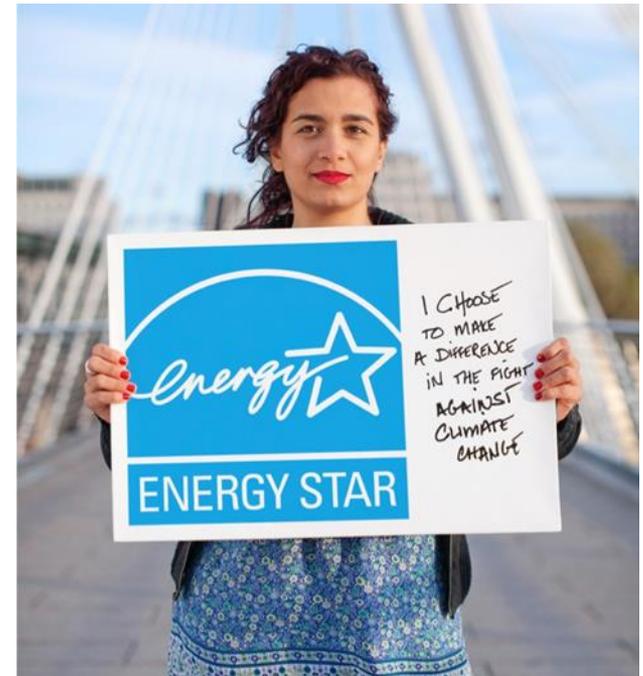


ENERGY STAR Connected Criteria

	Smart Thermostats	Refrigerators & Freezers	Clothes Washers	Clothes Dryers	Room A/C	Dish-washers	Electric Vehicle supply equipment	Lighting	Pool Pumps	Commercial Ice Makers (draft)
Energy Consumption Reporting		✓	✓	✓	✓	✓		✓	✓	✓
Operational Status Reporting		✓	✓	✓	✓	✓		✓	✓	✓
Remote Management		✓	✓	✓	✓	✓		✓	✓	✓
Demand Response	✓	✓	✓	✓	✓	✓	✓		✓	✓
Open Access	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DR override by Consumers	✓	✓	✓	✓	✓	✓	✓		✓	✓
Connected Capability not Optional	✓									

Key Considerations

- Consumer motivations
- Consumer experience
- Consumer engagement





Jantz-sell.taylor@epa.gov

www.energystar.gov/connectedwebinars



Lessons Learned

- Still early days, not yet at state where standardizing all (e.g., interoperability), makes sense: more to gain from innovation than complete standardization.
- Important first steps: Establishing definitions, basic functionality, including DR; establishing uniform test for DR
- Greatest interest in products with immediate, obvious consumer service like connected thermostats, room air conditioning, lighting, electric vehicle supply equipment.
 - Good overlap with utility interest.
 - Slower adoption in appliances
- Consumer needs education; need to understand value. Partners share their insights on what will resonate:
 - Sears: What we've learned from our customers is that we need to share stories/examples that demonstrate emotional value from connected appliances. Appealing to safety/security, convenience/time savings, and family health, in addition to the cost savings that the proper use represents, will help build the appeal. In store/online demonstrations are also going to be effective.
- Greater consumer interest in the connected home & larger ecology of devices driving increasing participation in ENERGY STAR connected.



What is Next: ENERGY STAR and Intelligent Efficiency

- Set initial technical specs that support advanced energy control of efficient products with the end user in mind. Update as revise specifications.
 - Criteria for interoperability, open standards, energy use reporting, DR consumer override, etc.
 - Watching industry standardization efforts on Air source heat-pumps, water heating, Central Air Conditioning
- Leverage the unique position of the ENERGY STAR program as a trusted resource for partners and consumers in the context of the smart home.
- Facilitate sharing of resources on intelligent efficiency among our partners and will grow to helping consumers understand the connected home in the context of managing energy use.
 - To date: hosting informative webinars and annual partner meeting workshop