Research Contributions

• Fourth CTA-commissioned energy use study underway
• Energy savings potential of home automation/smart home/IoT
Energy Use Study

• Key elements:
  – Refined AEC estimates for 17 priority products
  – Uncertainty assessment – New

• Target completion end of Q1 2017
Savings Potential of HA/IoT

• The Energy Savings Potential of Home Automation Technology
  – 17 candidate approaches, 5 selected
Savings Potential of HA/IoT

- Connected thermostats
- HVAC zoning control
- Window covering control
- Occupancy-based lighting control
- Circuit-level control
Savings Potential of HA/IoT

- Uncertainty factors:
  - Limited number and scope of field studies
  - Differences in occupant behavior, building construction, climate, HVAC systems
  - For some categories, products not yet widely available
Savings Potential of HA/IoT

• Reduce total residential primary energy consumption by as much as 10 percent – which is more than consumer electronics’ share of residential primary energy consumption (8.4 percent)
Savings Potential of HA/IoT

• Additional value:
  – Businesses: More effective marketing of energy value proposition, increasing consumer appeal
  – Utilities: Fuller consideration in existing energy efficiency and demand response programs
Policy Initiatives

• Voluntary agreements
• Policy alignment
VA for Set-top Boxes

- Consumers saved approximately $646 million in energy costs in 2015
- 15.9% reduction in national energy consumption from STBs, even as their functionality increased
VA for Set-top Boxes

- Named “Project of the Year” by *Environmental Leader* in 2016
VA for SNE (Routers, Modems)

• Although commitments did not take effect until 2016, most reporting signatories met the 90% commitment a year early.
• Overall, 89.6% of reported SNE units purchased and sold in 2015 met the new efficiency standards.
VAs for STBs and SNE

• New site for accessing all reports and energy information:

www.energy-efficiency.us
Current Challenges

• Regional/international:  
  – External power supplies: Canada-Mexico-United States  
  – Non-tariff barriers to trade related to energy efficiency requirements
Current Challenges

• United States: TV test method
Connected Devices Alliance

- Launched in 2015
- Globally coordinated actions related to savings from networks and networked devices
- cda.iea-4e.org
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