Beyond TVs: Where Are We Going and How Are We Getting There?

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Northeast Energy Efficiency Partnerships (NEEP)

Part of the
2013 ENERGY STAR Products Partner Meeting
Webinar Series
Tuesday, December 17th, 1pm, 2013
About NEEP

**MISSION**
Accelerate energy efficiency in homes, buildings & industry in the Northeast - Mid-Atlantic region

**GOAL**
Keep the region a national leader in accelerating energy efficiency

**STRATEGIES**
- Reduce Building Energy Use
- Speed High Efficiency Products
- Make Efficiency Visible
- Advance Knowledge - Best Practices

Regional energy efficiency collaborations since 1996
About NEEP

PRIMARY AUDIENCES: WHO WE SERVE

POLICY MAKERS

EFFICIENCY PROGRAM ADMINISTRATORS

INDUSTRY PLAYERS & BUSINESS INTERESTS
Whether studying at school, working in the office, or relaxing at home, we are constantly surrounded by electronic devices. They help us stay connected, learn skills, accomplish tasks, and enjoy entertainment. But, as the surge of electronics gathers in size, so does our electricity bill and environmental impact. According to ENERGY STAR, consumer electronics are responsible for 15% of electricity used in most U.S. homes. Finding and capturing efficiency opportunities associated with electronic use should remain a priority for energy efficiency stakeholders in the Northeast.

BCE STRATEGY REPORT

Products

Consumer Value

Regional Activity

Public Policy
Through successful implementation of this strategy, we feel the region can achieve a goal of:

20% total BCE category energy reduction by 2020
Report Details

Report elements:
• Market assessment
• Energy consumption
• Programs and products
• Consumer and Policy trends
• Barriers
• Recommend strategies
BCE Products Researched--Poll

- Advanced Power Strips
- Audio Visual Equipment
- Computer Monitors
- Desktop Computers
- Game Consoles
- Home Office & Imaging Equipment
- Home Theater
- Laptops & Thin Clients
- Set-Top-Boxes
- Tablets & Smartphones
- TVs
Set Top Boxes (STBs)
The Problem: Set Top Boxes

- Unique market structure: consumers *rent* an STB
- Limited consumer options
- Challenge to bring efficiency to the table
Strategy: Configurations and Technology

- Potential for voluntary agreements
- Efficiency Programs help move to:
  - better boxes (ENERGY STAR, Deep Sleep)
  - better configurations (Thin Clients)

Efficiency Programs, ENERGY STAR, Service Providers, Manufacturers, and Advocates/Consumer Educators can play a role
Strategy: Change How We Access Content

- Digital media receivers (DMRs), 60% growth in sales for services estimated by 2015

...even further, consumers switching from content on televisions to streaming on laptops, tablets, smart phones...
Game Consoles
The Problem: Game Consoles

- Only 3 major players: Microsoft, Nintendo, Sony (OUYA still a wild card)
- Each device is inherently different
- ENERGY STAR recognition criteria exists, but challenging
- Significant energy users
ENERGY STAR Recognition

- Limits on 3 modes: Media play (STB type of activity streaming), Navigation, and Standby

**Criteria does not limit Game play!**

- Also includes Auto power down capability

<table>
<thead>
<tr>
<th>Operational Mode</th>
<th>Period of User Inactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Navigation Menu</td>
<td>1 hour</td>
</tr>
<tr>
<td>Active Game Play</td>
<td>1 hour</td>
</tr>
<tr>
<td>Active Game Play Pause</td>
<td>1 hour</td>
</tr>
<tr>
<td>Active Video Stream Play</td>
<td>4 hours</td>
</tr>
<tr>
<td>Active Video Stream Pause</td>
<td>1 hour</td>
</tr>
</tbody>
</table>
# Efficiency Status

<table>
<thead>
<tr>
<th>Current Generation Console</th>
<th>Wii U</th>
<th>Xbox One</th>
<th>PS4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient?</td>
<td>✓</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Last Generation Console</th>
<th>Wii</th>
<th>Xbox 360</th>
<th>PS3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales split of three major last generation game consoles</td>
<td>40%</td>
<td>31%</td>
<td>28%</td>
</tr>
</tbody>
</table>

- Wii U meets all ENERGY STAR criteria, but is not recognized
- The Xbox One and PS4 consoles launched in November...
Strategy: Get Recognized!

Collaborate with manufacturers to improve efficiency and gain ENERGY STAR recognition

- Timing: the right phase of development
- Work through barriers to adopting the ENERGY STAR recognition
- Efficiency Programs claim savings?

ENERGY STAR, Advocates, Manufacturers, and potentially Program Administrators can play a role
Strategy: Media Campaign?

- Consumer education on game console energy use – creative (social) media marketing campaign?
- Demonstrating consumer support for could leverage conversations with manufacturers.
- Example:

Your 2007 Playstation 3 uses more energy \textit{in idle mode} than 2 standards refrigerators!

Sources: NRDC, ENERGY STAR, themoreyouknow.com
Advanced Power Strips (APS)
Problem: APS

- Technology isn’t new, but hasn’t been great adoption

- Industry challenges: 2 “tiers” of technology

- APS Programs challenges
Opportunity: APS Savings

- 1/4 of BCE energy consumption is wasted
- Existing APS for PC and A/V targeting off mode
- Sleep and Idle mode savings can be reached with Tier 2 APS
## Opportunity: APS Savings

<table>
<thead>
<tr>
<th>BCE Product Segment</th>
<th>BCE Product Category</th>
<th>Unit Energy Consumption (kWh)$^47$</th>
<th>Installed Base (in millions)$^48$</th>
<th>Annual Energy Consumption (TWh)$^49$</th>
<th>Active Mode (TWh)$^50$</th>
<th>Other Modes (TWh)$^51$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audio Visual</strong></td>
<td>Receivers</td>
<td>65</td>
<td>19.93</td>
<td>1.30</td>
<td>0.97</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>Blu-Ray players</td>
<td>14</td>
<td>2.42</td>
<td>0.03</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Computer speakers</td>
<td>37</td>
<td>14.90</td>
<td>0.55</td>
<td>0.15</td>
<td>0.40</td>
</tr>
<tr>
<td></td>
<td>DVD players</td>
<td>28</td>
<td>44.89</td>
<td>1.26</td>
<td>0.14</td>
<td>1.12</td>
</tr>
<tr>
<td></td>
<td>Multifunction devices</td>
<td>12</td>
<td>22.75</td>
<td>0.27</td>
<td>0.01</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Computing</strong></td>
<td>Desktop computers</td>
<td>220</td>
<td>20.33</td>
<td>4.47</td>
<td>4.09</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>Laptops</td>
<td>63</td>
<td>26.57</td>
<td>1.67</td>
<td>1.49</td>
<td>0.18</td>
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<tr>
<td></td>
<td>Computer monitors</td>
<td>97</td>
<td>26.37</td>
<td>2.56</td>
<td>2.35</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Content and Gaming</strong></td>
<td>Game consoles</td>
<td>18</td>
<td>21.94</td>
<td>0.39</td>
<td>0.19</td>
<td>0.20</td>
</tr>
<tr>
<td><strong>Televisions</strong></td>
<td>Televisions</td>
<td>183</td>
<td>71.06</td>
<td>13.00</td>
<td>11.25</td>
<td>1.76</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>737</td>
<td>271.16</td>
<td>25.5</td>
<td>20.66</td>
<td>4.83</td>
</tr>
</tbody>
</table>
Strategy: APS Program Design

- Increase in direct install
- Analyze potential of “Tier 2”
- New Tool: APS Test Protocol
- Retailer/floor staff training on proper installation
- Consistent educational material needed
- Social media campaign?
- Goal: Region reach 20% penetration by 2020

NEEP Convenes an APS Working Group to move the technology forward

Program Administrators, Advocates, ENERGY STAR, Retailers, Manufacturers, and NEEP’s APS Working Group can play a role
Home Energy Management Systems (HEMS)
Home Energy Management Systems (HEMS)

What are they?

- HEMS connect to “smart” products
- Allow for remote control of home systems
- Can purchase at retail stores, through service providers, and direct manufacturer sales.
  - Telecommunications organizations and mobile platforms may offer in future
Challenge and Opportunity: HEMS

Challenges:
• Cost: currently very high
• Compatibility/interoperability
• Security: rely on internet
• Program design: No consistent model yet

Opportunities:
• Systems collect a lot of data
• HEMS have peak demand reduction potential
• Information feedback may lead to behavioral changes
• HEMS are convenience and allow for control
Strategy: Increase HEMS Adoption

- Pursue incentives:
  - service providers
  - individual products
  - demand-response-enabled

- Need for research

- Coordinate closely with ENERGY STAR

- NEEP Convening HEMS conversations—join us!

Program Administrators ENERGY STAR, and Advocates can play a role
Any Questions?
Thank you to the BCE Leadership Advisory Committee

- ACEEE
- Appliance Standards Awareness Project (ASAP)
- Cadmus Group
- Cape Light Compact
- CLASP
- Efficiency Vermont
- Embertec
- EMI Consulting
- Energy Futures Group
- ICF International
- LIPA
- National Grid
- NEEA
- Northeast Utilities
- NRDC
- NYSERDA
- TopTen USA
- United Illuminating
- US EPA/ENERGY STAR
- VEIC
Thank you!

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Read the full Report, available from
http://neep.org/efficient-products/business-consumer-electronics/index