



ENERGY STAR® Set-top Box Program Updates

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2009 ENERGY STAR Electronics Partner Meeting

September 24, 2009



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Today



- EPA's ENERGY STAR Set-top Box (STB) Program
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 - EPA support to partners



STB Program Background



- EPA's objectives:
 - Drive for the greatest possible energy savings
 - Identify roles and responsibilities for all key stakeholders.
 - Develop performance based specs that recognize market leaders in energy efficiency.
 - Leverage existing test procedures.
 - Harmonize with domestic and international partners.
 - Offer longevity and fair comparison of products, consider feature richness.

Service Provider Partnership



- Purchase and deploy qualified STBs according to fleet requirements
- Ensure STBs maintain qualification
- Deploy user interface to permit disabling of speculative recording
- Maintain ENERGY STAR product labeling
- Install qualified remote STBs in multi-room installations
- Educate sales staff, customer service reps and subscribers about energy-saving features and commitments to energy efficiency
- Share annual purchase/deployment data with EPA

Service Provider Purchase / Fleet Requirements



- Meet or exceed either a purchase or fleet requirement for each year of partnership
- Purchase requirement:
 - 50% of new boxes purchased in a calendar year must be ENERGY STAR qualified
 - Refurbishment does not count towards purchase requirement
- Fleet requirement:
 - 10% of fleet must be ENERGY STAR qualified in 2009, and 25% must be qualified in 2010
 - The following activities count toward the fleet requirement: Purchase and deploy new STBs, Deploy refurbished STBs, or upgrade STBs in the field
- Purchase and Fleet requirements in 2011 and beyond are TBD

OEM Partnership



- Qualify products that meet ENERGY STAR requirements
- Label qualified products
- Include collateral materials
- Share annual unit shipment data with EPA

Technical Specification: Approach



- Current Best Practices (Tier 1, Jan 2009)
- Next Generation Technology (Tier 2, Jan 2011)
- Total Energy Consumption (TEC) approach
 - Specified in kWh/year rather than Watts
 - Intended to prevent situations where products that meet ENERGY STAR criteria actually use more energy than those that do not qualify
- Provides OEMs with flexibility to achieve energy savings through a variety of strategies
- Delivers additional power consumption allowances to accommodate feature richness

Technical Specification: Power Allowances



Table 1: Base Functionality Annual Energy Allowance

Base Functionality	Tier 1 Annual Energy Allowance (kWh/year)	Tier 2 ¹ Annual Energy Allowance (kWh/year)
Cable	70	50
Satellite	88	56
IP	45	36
Terrestrial	27	22
Thin-Client/Remote	27	22

Table 2: Additional Functionalities Annual Energy Allowance

Additional Functionalities	Tier 1 Annual Energy Allowance (kWh/year)	Tier 2 Annual Energy Allowance (kWh/year)
Additional Tuners ²	53	16
Additional Tuners – Terrestrial /IP ³	14	8
Adv. Video Processing ⁴	18	12
DVR	60	32
High Definition ⁵	35	12
Removable Media Player	12	8
Removable Media Player/Recorder	23	10
Multi-Room ⁶	44	25
CableCARD ⁷	15	TBD
DOCSIS ⁸	20	TBD
Home Network Interface	20	10

Program Update - Partnerships



Service Provider Partners



Partners with Qualified Products	Number of Qualified Products
Cisco Systems	10
DIRECTV	12
General Instrument Corporation (Motorola)	7
Huawei Technologies Co., Ltd.	1
Pace plc	4

Program Update - Impacts



- Current
 - Manufacturers are reporting they are changing their designs as a result of ENERGY STAR's specification.
 - Manufacturers are reporting that ENERGY STAR qualification is being specified by a broad spectrum of service providers.
- Potential
 - If all STBs sold in the US met ENERGY STAR, the savings in energy costs will grow to about \$2 billion each year and greenhouse gas emissions will be reduced by the equivalent of greenhouse gas emissions from about 2.5 million vehicles

What's Next – Spec Revision



- Update technical product requirements for OEMs:
 - Reconsider products excluded under Tier 1
 - Establish levels and additional functionality allowances for TBD elements
 - Reality check on all specification levels
- Update partnership requirements for Service Providers:
 - Purchase and fleet requirements to be established for 2011 and beyond



What's Next – Spec Revision Timeline



- **November, 2009:** Launch Tier 2 STB spec process
- **January, 2010:** Tier 2 draft final technical levels & 2011 purchase/fleet requirements
- **April 1, 2010:** Target Tier 2 specification and 2011 service provider purchase/fleet requirements published
- **January 1, 2011:** Target Tier 2 effective date

What's Next - STB Program Benefits Calculator Tool



ENERGY STAR SET-TOP BOX (STB) PROGRAM BENEFITS CALCULATOR

1. ENTER MARKET INFORMATION

STB Qualification Level: **2009**
 ENERGY STAR Market Share: **5%**
 Free Rider Factor: **3%**
 Cost of Energy: **11.27** ¢ / kWh
 Emissions Factor: **1.54** lb CO₂/kWh

Note 1: Default values for ENERGY STAR Market Share are 0% for 2009 and 10% for 2011. See Section II, Additional Notes, on the Reference table of this workbook for more details.
 Note 2: Default values for cost of energy and emissions factor are national averages. Users may modify data to represent local cost of energy and emissions factor.
 Note 3: The Free Rider Factor represents the percent of STBs in the Program Fleet that would have been upgraded to or newly purchased as ENERGY STAR, regardless of whether a utility program was initiated, due to the Service Provider(s) commitment to ENERGY STAR. The factor varies greatly by service territory.

2. ENTER NUMBER AND TYPE OF ENERGY STAR SET-TOP BOXES ENTERING SERVICE TERRITORY



STB Type	Quantity	High Definition (HD)	Digital Video Recorder (DVR)	Advanced Video Processor	DCC888	Cable Card	Removable Media Player	Removable Media Player / Recorder	Additional Tuners	Additional Tuners (D)	Multimedia
1 Satellite	1,000	1	1	1				1			
2 Cable	1,000	1	1	1		1					
3											
4											
5											
6											
7											
8											
9											
10											

PROGRAM ANNUAL STATISTICS

Baseline

Energy Consumption 649,600 kWh
 Operating Cost \$ 73,210
 CO₂ Emissions 1,000,384 pounds



Energy Savings 192,660 kWh
 Operating Cost Savings \$ 21,713
 CO₂ Emissions Reduction 296,696 pounds

What's Next – EPA Partner Support



- Convene an ENERGY STAR STB Workgroup
 - Coordinate with Canadian workgroup
 - Address open questions
 - EM&V
 - Attribution
 - Develop market intervention strategies
- Provide access to resources
 - Technical
 - Market data
 - Partner matchmaking
- Let us know if you are interested!

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