

ENERGY STAR for Set-top Boxes

Draft 3 Program Requirements for
Cable, Satellite, and Telecom Service Providers
and
Set-top Box Manufacturers

Stakeholder Meeting

February 1, 2008

Washington, DC



Welcome and Introductions

Katharine Kaplan, U.S. EPA

Today's Agenda



9:50 a.m.	Overview of Draft 3 specification for Service Providers
10:30 a.m.	Overview of Draft 3 specification for Manufacturers
11:30 a.m.	Lunch
12:15 p.m.	Process/timeline for joining ENERGY STAR and submitting data
12:40 p.m.	Stakeholder presentations
1:55 p.m.	DOCSIS 2 and higher
2:05 p.m.	Discussion of energy allowances
3:10 p.m.	Outstanding questions
3:40 p.m.	Conclusion
4:00 p.m.	Meeting adjourn

Overview of Draft 3 Specification for Service Providers

Katharine Kaplan, U.S. EPA

Overview of Draft 3 Specification for Service Providers



- Key changes from Draft 2:
 - Purchase and deployment periods
 - Calculating purchase and deployment achievements
 - Labeling requirements
 - Consumer education requirements
 - Addressing products that employ auto power down
- Outstanding questions:
 - Are testing requirements for Service Providers clear?
 - Do requirements for electronic labeling offer sufficient flexibility while continuing to ensure clear communication of ENERGY STAR status to consumers?

Key Changes from Draft 2



- Purchase and deployment periods:
 - Align with a calendar year, beginning with 2009
- Calculating purchase and deployment achievements:
 - Independent requirements: 50% of boxes purchased **AND** 50% of boxes deployed in 2009
 - % requirement TBD for 2010 and 2011
 - Refurbished or legacy boxes may count toward requirement

Key Changes from Draft 2 (cont.)



- Labeling requirements:
 - Product must be labeled physically or electronically
 - Electronic labeling must appear at power up for ≥ 5 seconds, or at another event/location approved by EPA
 - Electronic labeling must appear as part of APD, or at another event/location approved by EPA

Key Changes from Draft 2 (cont.)



- Consumer education requirements:
 - Inform of expected energy savings and environmental benefits with materials using the ENERGY STAR mark at installation
 - Inform of implications of altering energy-saving settings
 - Inform of additional energy-saving options
 - Train sales, installation, and customer service staff to provide instruction regarding how to maintain qualification at installation

Key Changes from Draft 2 (cont.)



- Addressing products that require APD to maintain ENERGY STAR qualification:
 - Configure box so that APD engages within 4 hours of inactivity
 - Settings shall persist unless user modifies later
 - STB may exit auto-initiated Sleep to scan for program, system, or scheduling info. or maintenance activity, but may exit Sleep mode for no longer than 2 hours in a 24 hour period that device would otherwise remain in Sleep
 - Manufacturers must inform SPs if APD is necessary for qualification

Outstanding Questions for Service Providers



- Are testing requirements for Service Providers clear?
 - (Testing a representative sample either at live head end or at representative head end in a laboratory)
- Do requirements for electronic labeling at power up and APD offer sufficient flexibility while continuing to ensure clear communication of ENERGY STAR status to consumers?

Overview of Draft 3 Specification for Manufacturers

Thomas Bolioli, Terra Novum
Dave Beavers, The Cadmus Group

Overview of Draft 3 Specification for Manufacturers



- Key changes from Draft 2:
 - Labeling guidelines
 - Use of “Sleep,” rather than “Standby”
 - Annual Energy Allowance criteria adjusted
 - Allowances for IP boxes
 - Allowance for Gateway boxes
 - Treatment of DVD players
 - Removal of EPG and system update requirements
 - Effective dates
- Outstanding questions:
 - Are the requirements for STBs with external power supplies clear?
 - Energy Allowances and DOCSIS to be discussed this afternoon

Key Changes from Draft 2



- Labeling guidelines:
 - Not required to label boxes shipped to Service Providers
 - May include label as a convenience to Service Provider
 - If chosen over physical labeling, electronic labeling must at power up for ≥ 5 seconds, or at another event/location approved by EPA
 - If chosen over physical labeling, electronic labeling must appear as part of APD (if STB has APD), or at another event/location approved by EPA

Key Changes from Draft 2 (cont.)



- Labeling guidelines (cont.):
 - For products sold to service providers, clearly communicate the requirements for configuration and installation to maintain ENERGY STAR qualification
 - Explain in product guide and spec sheets conditions under which model can earn the ENERGY STAR, including that Service Provider must be a partner
 - For STBs sold at retail, include info on how use, in conjunction with a Service Provider subscription, can impact energy use and what steps must be taken to assure qualification

Key Changes from Draft 2 (cont.)



- Use of the term “Sleep,” rather than “Standby”:
 - Standby typically used to precisely define a power state (e.g. standby-passive, standby-active)
 - Sleep is a more generic term referring to a device that is not ON, but not OFF
 - Benefits of using Sleep over Standby:
 - Avoids confusion / inconsistency with other Standby definitions
 - More appropriate for the TEC approach used in this specification

Key Changes from Draft 2 (cont.)



- Allowances for IP boxes:
 - Per definition, restricted to Telecom STBs for Tier 1
 - i.e. “IP set-top boxes sold or provided outside of a dedicated service or service contract” are excluded for Tier 1
 - Proposed Base Allowance of 45 kWh per year for Tier 1, 36 kWh per year for Tier 2
 - Additional Functionalities Allowances may also be applied as appropriate

Key Changes from Draft 2 (cont.)



- Gateway STB Additional Functionalities Allowance:
 - Intended for multi-room boxes that can offer energy savings by providing content to more than one TV over multiple independent STBs
 - Must provide content to more than one TV after installation
 - Process for applying Gateway Additional Allowance:
 - First, test the multi-room STB and compare the results to the specification criteria assuming the STB will deliver content to only one TV – if STB passes then no requirements at installation
 - If the STB does not pass the single TV STB test add the Gateway additional annual energy allowance (i.e. 44 kWh/yr for Tier 1) to the criteria established for the STB. Compare the test results to the more lenient Gateway criteria
 - If the STB qualifies as a Gateway STB, manufacturer must clearly indicate in product literature that product only qualifies for ENERGY STAR when providing content to more than one TV

Key Changes from Draft 2 (cont.)



- Treatment of DVD players:
 - Products that can be covered by the ENERGY STAR audio/DVD specification are excluded from the set-top box specification for Tier 1
 - DVD Recorder with ATSC tuner falls under DVD specification

Key Changes from Draft 2 (cont.)



- Removal of EPG and system update requirements:
 - Draft 2 Section 4(E) Electronic Program Guide and System Update Requirements has been removed
 - The maximum allowable time for exiting Sleep is intended to apply only in a case where a manufacturer claims an auto power down capability and uses equation "b" for the base assessment
 - Equation B gives credit for auto power down (i.e. use of equation B over A is more likely to result in a STB meeting ENERGY STAR criteria)
 - Equation A Duty Cycle: 14 hours ON, 10 hours SLEEP
 - Equation B Duty Cycle: 7 hours ON, 10 hours SLEEP, 7 hours APD

Key Changes from Draft 2 (cont.)



- **Effective dates:**
 - Tier 1 effective date: December 15, 2008
 - Tier 2 effective date: December 15, 2010



- Are the requirements for STBs with external power supplies clear?

Process and Timeline for Joining ENERGY STAR and Submitting Data

Darcy Martinez, ICF International

Joining ENERGY STAR and Reporting Data



- Key events after specification publication
 - Service Providers
 - Manufacturers
- Accessing the ENERGY STAR marks
- Requesting and signing the Partnership Agreement (PA) or Commitment Form
- Submitting data
 - Service Providers (purchase and deployment data)
 - Manufacturers (qualified product data and unit shipment data)

Key Events – Service Providers



- May sign a PA immediately after publication of the Final Specification in late March
- May promote their ENERGY STAR partnership and commitment to purchase and deploy 50% of qualified boxes in 2009 immediately after receiving a Welcome Aboard Pack and executed PA from EPA (usually within one week of returning signed PA to EPA)
- Will appear as a partner on the ENERGY STAR Web site by April 15

Key Events – Manufacturers



- Instructions for signing a PA or Commitment Form will be distributed to prospective partners prior to the specification's effective date
- May promote their ENERGY STAR partnership for STBs after receiving a Welcome Aboard Pack and executed PA from EPA, which will occur **after the technical specification has taken effect** on 12/15/08
- Will appear as a partner on the ENERGY STAR Web site after signing PA and submitting first set of qualified product data to EPA

Access to the ENERGY STAR Marks



Partner Logo

Use the Partnership Mark to promote an organization's commitment to and partnership in the ENERGY STAR Program.

Partner Logo (horizontal) EPS GIF JPG PSD TIF	Partner Logo (horizontal) EPS GIF JPG PSD TIF	Partner Logo (horizontal) EPS GIF JPG PSD TIF
Partner Logo (vertical) EPS GIF JPG PSD TIF	Partner Logo (vertical) EPS GIF JPG PSD TIF	Partner Logo (vertical) EPS GIF JPG PSD TIF

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Certification Mark

Use the Certification Mark as a label on products, homes, and buildings that meet or exceed ENERGY STAR performance guidelines.

Certification Mark (horizontal) EPS (zip) GIF JPG PSD TIF	Certification Mark (horizontal) EPS (zip) GIF JPG PSD TIF	Certification Mark (horizontal) EPS (zip) GIF JPG PSD TIF

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Roll-Over Graphic for Web Product Labeling (GIF file)

Signing the Partnership Agreement



- Request a customized PA packet or Commitment Form by sending full contact information to STBs@icfi.com
- Review the packet and sign
- Return the PA and Commitment Form according to the instructions in the packet
- Make sure to inform EPA of any change in primary contact information

Signing the PA (cont.)



Partnership Agreement between ENERGY STAR® and

(ENTER PARTNER NAME HERE)

an ENERGY STAR® Partner

Through this agreement, _____ ("ENERGY STAR Partner") joins in partnership with the US Environmental Protection Agency (EPA) and the Department of Energy (DOE) in one or more areas. ENERGY STAR Partners promote buildings, products, homes, and services that perform better than conventional products and services. The ENERGY STAR name and/or mark in association with the ENERGY STAR Partner's name and/or mark in association with the ENERGY STAR mark is the property of the U.S. Environmental Protection Agency and the U.S. Department of Energy. The ENERGY STAR Partner agrees that it will use the ENERGY STAR mark as a trustworthy symbol that makes

Partner Commitments

ENERGY STAR Partner is committed to the Commitment Form. For the designated program area(s) outlined in the following

- ENERGY STAR Program Requirements For each program area, such as manufacturers, retailers, consumers or organizations. Specific program area(s) of participation and updates applicable, these include ENEC specifications that must be met for buildings, homes, and products.
- ENERGY STAR Identity Guidelines Partner will adhere to these guidelines for advertising agencies, dealers,



ENERGY STAR® Commitment Form: Program Area(s) Where ENERGY STAR Partner Commits to Fulfill Program Requirements

Partner Name: _____
Date: _____

Partner agrees to fulfill the Program Requirements of each program area checked below.

Promote ENERGY STAR as an Energy Efficiency Program Sponsor* in the:

- Consumer Product Market
- Residential New Construction Market
- Existing Commercial Buildings Market
- New Commercial Buildings Market
- Industrial Market

* Such as states, utilities, or regional program coordinators

Help Clients Improve Their Energy Performance

Commercial and Industrial Service and Product Providers, supporting the:

- Existing Commercial Buildings Market
- New Commercial Buildings Market
- Industrial Market

Home Electronics

- Audio Equipment and DVD Products
- Digital-to-Analog Converter Boxes (DTAs)
- Telephony
- Televisions and VCRs

Heating, Ventilation, and AC Products

- Boilers
- Central ACs and Air-Source Heat Pumps
- Furnaces
- Geothermal Heat Pumps
- Light Commercial HVAC
- Programmable Thermostats
- Residential Ceiling Fans
- Residential Ventilating Fans

Reporting Data – Service Providers



- Submit purchase and deployment data no later than March 31 for the previous calendar year
- Format developed by EPA and vetted with partners in advance
- Option for submitting through third party
- Visit www.energystar.gov and click on Partner Resources for examples of summary reports

Reporting Data – Manufacturers



- Submit qualified product data as regularly as possible on Qualified Product Information (QPI) form
 - Confirm full list of qualified models and provide any updates at least annually
- Submit unit shipment data no later than March 31 for the previous calendar year
 - Format developed by EPA and vetted with partners in advance
 - Option for submitting through third party
 - Visit www.energystar.gov and click on Partner Resources for examples of summary reports

Stakeholder Presentation # 1

Noah Norowitz, NRDC

Stakeholder Presentation # 2

Robert Turner, Pace Micro Technology

Discussion of DOSCIS 2 & Higher

Thomas Bolioli, Terra Novum



- Questions:
 - Is an additional Allowance needed for DOSCIS 1, or is it sufficiently covered in the Base Allowance?
 - For DOSCIS 2, what is the incremental energy use over DOSCIS 1 and what energy saving opportunities (if any) are there?
 - For DOSCIS 3, can energy saving protocols be added to DOSCIS 3?

Discussion of Energy Allowances in Draft 3 Specification

Thomas Bolioli, Terra Novum
Dave Beavers, The Cadmus Group

Energy Allowances in the Draft 3 Specification



- New Additions
- Tier 1 Criteria
- Tier 2 Criteria

Draft 3 Energy Allowances – New Additions



- New additions to criteria:
 - IP (telecom only) added for Tier 1 and Tier 2
 - Gateway STB
 - Thin-Client / Remote Base
 - Cable Card (Tier 1)



- Changes to criteria:
 - DVR lowered (Tier 1)
 - Tier 2 Base and Additional Functionalities increased - made more lenient

Draft 3 Allowance Changes – Tier 1



Tier 1	<i>(in kWh per year)</i>	
	ENERGY STAR Draft 2	ENERGY STAR Draft 3
Base Cable	70	No Change
Base Satellite	88	No Change
Base IPTV	TBD	45
Base Terrestrial	27	No Change
Thin-Client/Remote	NA	27
Add Tuners	53	No Change
Add Tuners - Terrestrial/IP	14	No Change
Adv Video Process	18	No Change
DVR	83	60
High Def	35	No Change
Remov Media Play	12	No Change
Remov Media Rec	23	No Change
Gateway	TBD	44
Cable Card	TBD	15

Draft 3 Allowance Changes – Tier 2



Tier 2	<i>(in kWh per year)</i>	
	E* Draft 2	E* Draft 3
Base Cable	42	50
Base Satellite	44	56
Base IPTV	TBD	36
Base Terrestrial	22	No Change
Thin-Client/Remote	TBD	22
Add Tuners	8	16
Add Tuners - Terrestrial/IP	8	No Change
Adv Video Process	7	12
DVR	32	No Change
High Def	12	No Change
Remov Media Play	6	8
Remov Media Rec	6	10
Gateway	TBD	25
Cable Card	TBD	TBD

Outstanding Questions

Katharine Kaplan, U.S. EPA

All

Key Milestones



Key Milestone	Date
Publicly launch spec. development process by distributing announcement letter	March 15
Meetings in Denver with cable and satellite providers	April 25 - 27
Distribute an update document with a list of key questions for stakeholders	Early May
Stakeholder meeting in Washington, DC	May 15
Deadline for stakeholders to offer response to questions distributed in early May and share thoughts post May 15 stakeholder meeting	May 23
Release proposed specification approach and test procedure (Draft 1)	June 29
Deadline for initial stakeholder comments on Draft 1	July 12
International STB meeting at the IEA in Paris	July 4 - 6
Stakeholder meeting in Washington, DC	July 18

Key Milestones (Cont.)



Key Milestone	Date
Deadline for final stakeholder comments on Draft 1 and Paris meeting	July 27
Release Draft 2 Specification with proposed levels	Oct. 5
Stakeholder meeting in San Diego, CA	Oct. 16
Deadline for stakeholder comments on Draft 2 Specification	Nov. 14
Conference call with Canadian Service Providers	Dec. 13
Release Draft 3 Specification	Jan. 14
Stakeholder meeting in Washington, DC	Feb. 1
Deadline for stakeholder comments on Draft 3 Specification	Feb. 11
Release Final Draft Specification	Feb. 22
Deadline for stakeholder comments on Final Draft Specification (expected to be minor)	Mar. 14
Publication of Final Specification	Mar. 21
Specification effective date	Dec. 15 2008

Action Items



- EPA circulates presentations and attendee list and posts on Web.
- EPA clarifies purchase and deployment language in the Service Provider spec
 - Stakeholders provide comments on what boxes count towards requirements (e.g., new, refurbished, already installed), timing, and proposed percentage requirements
- EPA provides draft testing protocol details to stakeholders for comment. Will distribute prior to 2/11 comment deadline. (i.e., what is a representative sample)
- EPA schedules a follow up call(s) to discuss gateway boxes, home networking, and DOSCIS, ideally to be hosted prior to 2/11 comment deadline.

Action Items (Cont.)



- Stakeholders provide concepts for labeling – alternatives to resume from sleep electronic labeling
- EPA drafts data collection forms that articulate what data will be made public; circulate for comments and plan follow up call to discuss
- EPA outlines thoughts on meaning of refurbishment, when is it counted, etc. and floats for comments
- EPA schedules call on classification of hybrid architecture products
- EPA reviews treatment of IPTV and ONT?

Action Items (Cont.)



- EPA calls CableLabs about DOSCIS and power saving features
- EPA clarifies spec with regard to:
 - APD and need to exit Sleep for more than 2 hours
 - APD and the need to return to Sleep quickly
 - Examples of product scenarios and calculations (stakeholders are encouraged to send examples on which they'd like clarification)
 - Page 13, Table 3 duty cycle
- EPA attempts to characterize baseline for DOSCIS, IP, and thin client for utilities
 - When providing kWh, also provide W
 - EPA may request assistance from CEA and NCTA
- EPA suggests changes to latest draft of CSA 380-08

Contacts



Katharine Kaplan, EPA

- ENERGY STAR Product Manager for Consumer Electronics and Office Equipment
- kaplan.katharine@epa.gov, 202.343.9120

Darcy Martinez, ICF International

- dmartinez@icfi.com, 202.862.1234

Thomas Bolioli, Terra Novum, LLC

- tbolioli@terranovum.com, 617.923.4132

Dave Beavers, The Cadmus Group

- dbeavers@cadmusgroup.com, 617.673.7103