



ENERGY STAR® Set-Top Boxes Draft 2 Version 4.1 Specification

Stakeholder Webinar
September 16, 2013

U.S. Environmental Protection Agency
U.S. Department of Energy

Agenda



- 1 Introduction
- 2 Summary of Proposal
- 3 Discussion of Comments
- 4 Next Steps

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Webinar Details

- Audio provided via conference call in:
 - Call in:** +1.877.423.6338 (in the US)
+1.571.281.2578 (international)
 - Code:** 456417
 - Please keep phone lines on mute unless speaking
 - Press *6 to mute and un-mute your line
- Webinar materials will be available online shortly
 - Go to: www.energystar.gov/RevisedSpecs
 - Look for Set-Top Boxes & Cable Boxes
 - Click on: “Version 4.1 is under review.”

Introduction



- EPA and DOE appreciate stakeholders' feedback on the Version 4.1 Proposal Memo and participation in today's webinar

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Webinar Goals



1. Explain proposal in August 29 memo
2. Respond to stakeholder comments and outline path to finalization
3. Present timeline of next steps

Summary of Proposal

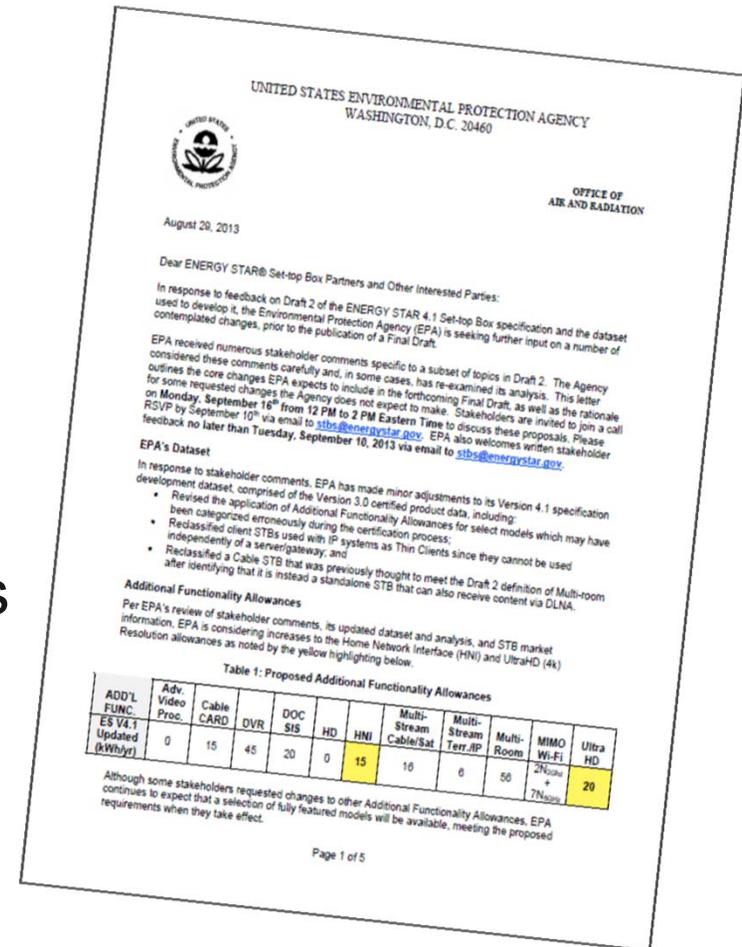


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EPA Released Memo on August 29



- Memo summarizes proposed changes due to comments on Draft 2
 - Review of the dataset
 - Increases to additional functionality allowances
 - Increases to base allowances
 - Clarifications to the Deep Sleep incentive



Dataset Edits



- Revised the application of Additional Functionality Allowances for select models based on stakeholder comments:
 - May have been categorized erroneously during the certification process
 - Examples:
 - Models with Ethernet connections, but do not qualify for HNI
 - DOCSIS adder removed from Satellite STB



Dataset Edits (cont.)

- Reclassified several STBs based on stakeholder comment:

- Client STBs used with IP systems that cannot be used independently of a server/gateway:

Service Provider IP  **Thin Client**

- Cable STB that can only receive (not send) content via DLNA:

Multi-room  **Standalone Cable STB w/ HNI**

- Removed non-HD models from consideration



Additional Functionality Allowances

- Table of allowances highlights the changes proposed in the memo:

ADD'L FUNC.	Adv. Video Proc.	Cable CARD	DVR	DOC SIS	HD	HNI	Multi-Stream Cable/Sat	Multi-Stream Terr./IP	Multi-Room	MIMO Wi-Fi	Ultra HD
ES V4.1 Updated (kWh/yr)	0	15	45	20	0	15	16	6	56	2N _{2GHz} + 7N _{5GHz}	20

- No changes proposed to the home networking allowances (Router, Access Point, Telephony)

Additional Functionality Allowances (cont.)



- EPA proposed to increase the HNI allowance:
10 kWh/yr  15 kWh/yr
- Change reflects higher energy consumption of MoCA 2 in Sleep Mode than assumed during the development of Draft 2.

Additional Functionality Allowances (cont.)



- EPA proposed a new UltraHD allowance:

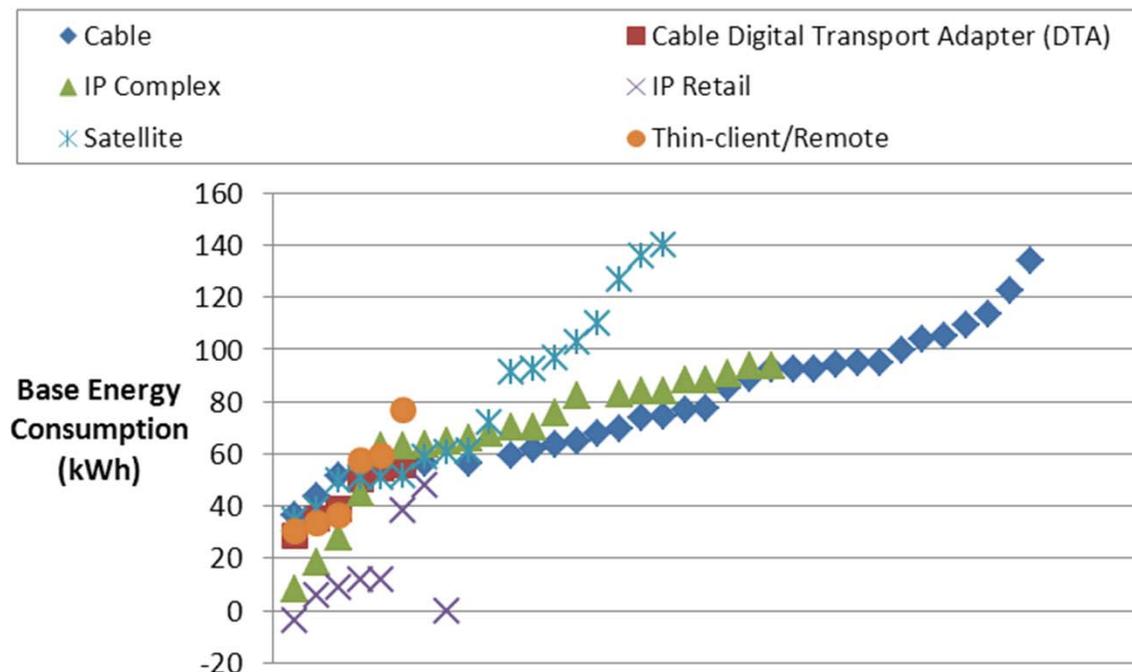
0 kWh/yr  20kWh/yr

- Intended to permit UltraHD STBs to qualify when they are released.

Base Energy Consumption

- As before, the base energy consumption for STBs in the dataset was calculated by subtracting the revised additional functionality allowances from the calculated AEC:

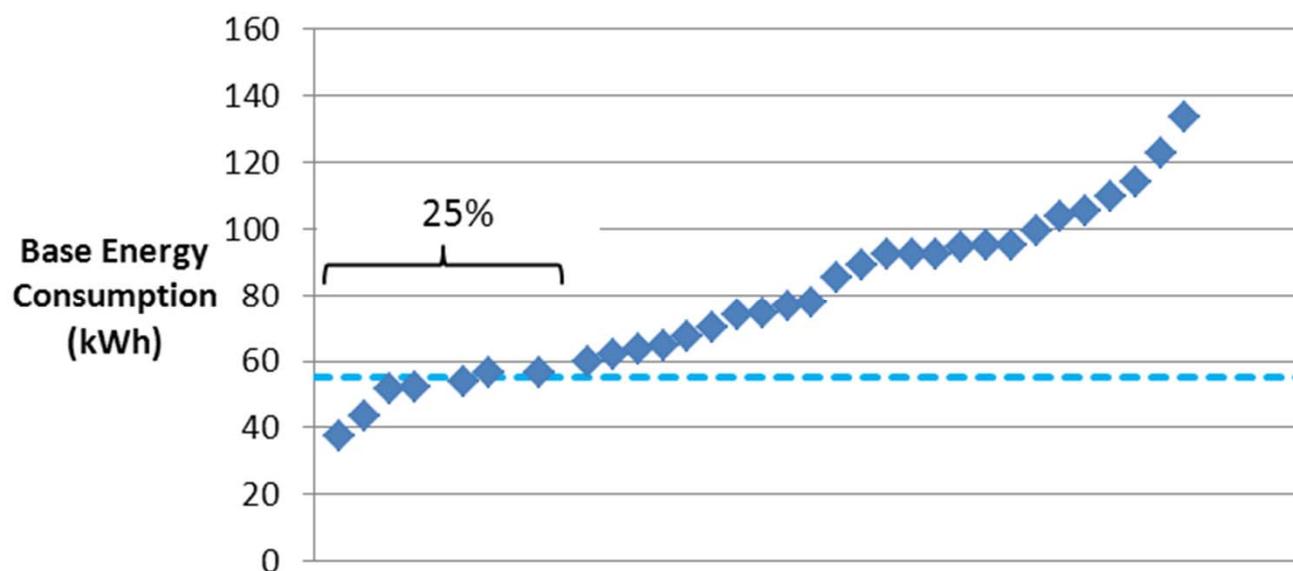
$$AEC - \sum AEC_{ADDL} = AEC_{BASE}$$





Base Functionality Allowances

- The base functionality allowances were then set by identifying the approximately the 25th percentile:

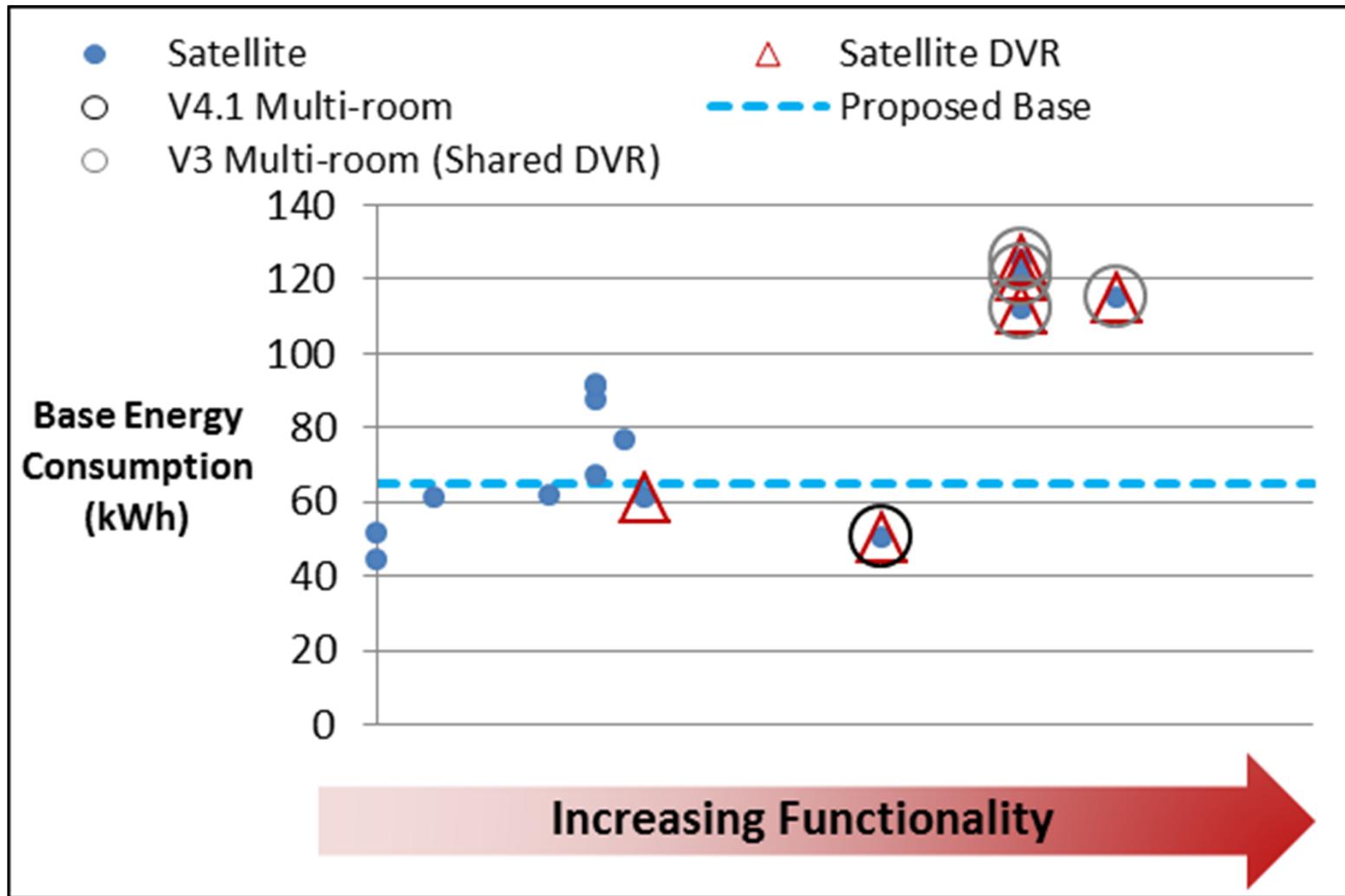


Base Functionalities

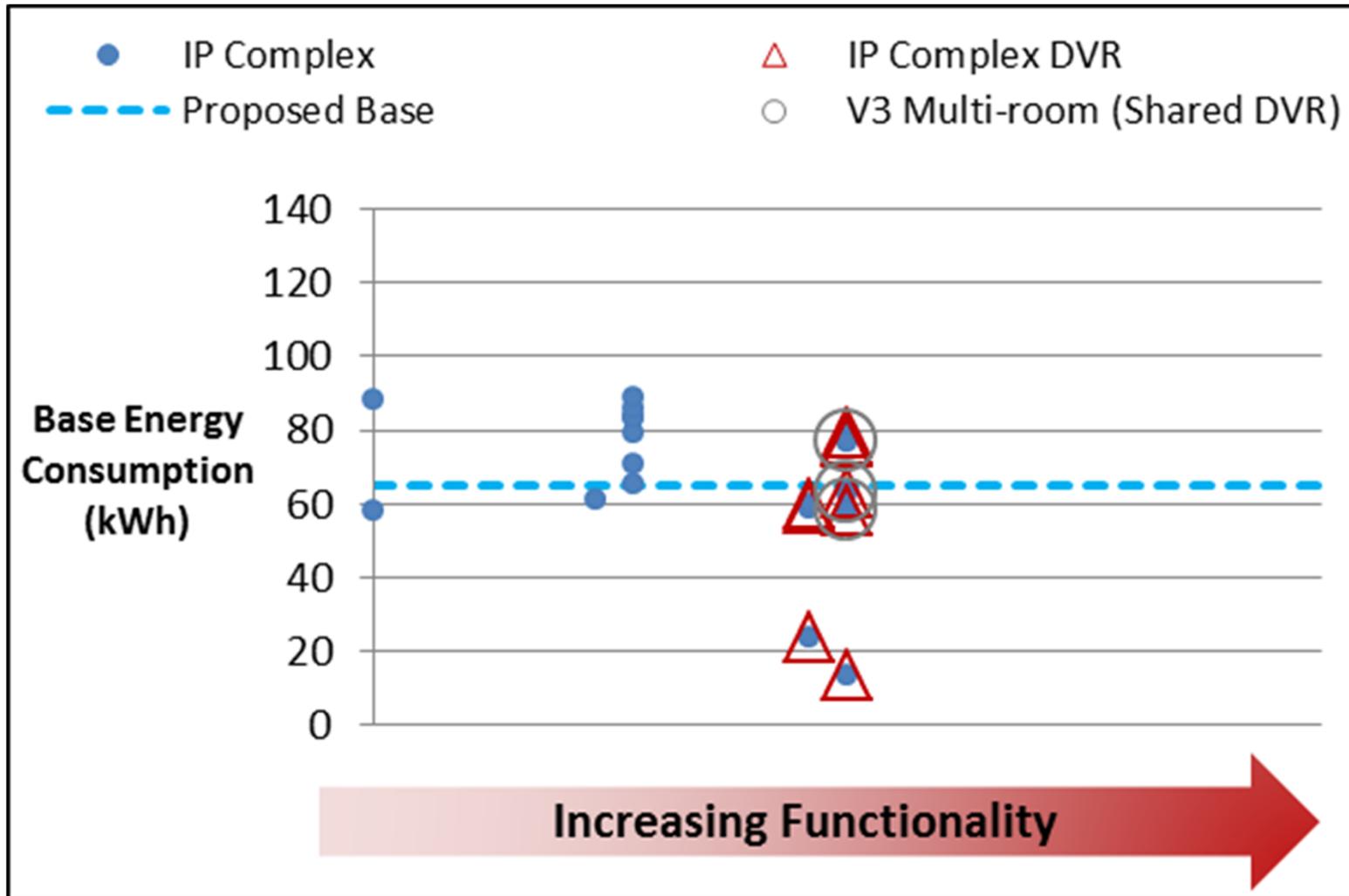


Base Type	Version 4.1 Draft 2 Allowance (kWh/yr)	Proposed Version 4.1 Allowance (kWh/yr)
1. Cable DTA	35	40
2. Cable	55	60
3. Satellite	50	65
4. MVPD Internet Protocol (IP)	45	65
5. Over-the-top (OTT) Internet Protocol (IP)	10	10
6. Terrestrial	18	18
7. Thin-client / Remote	15	30

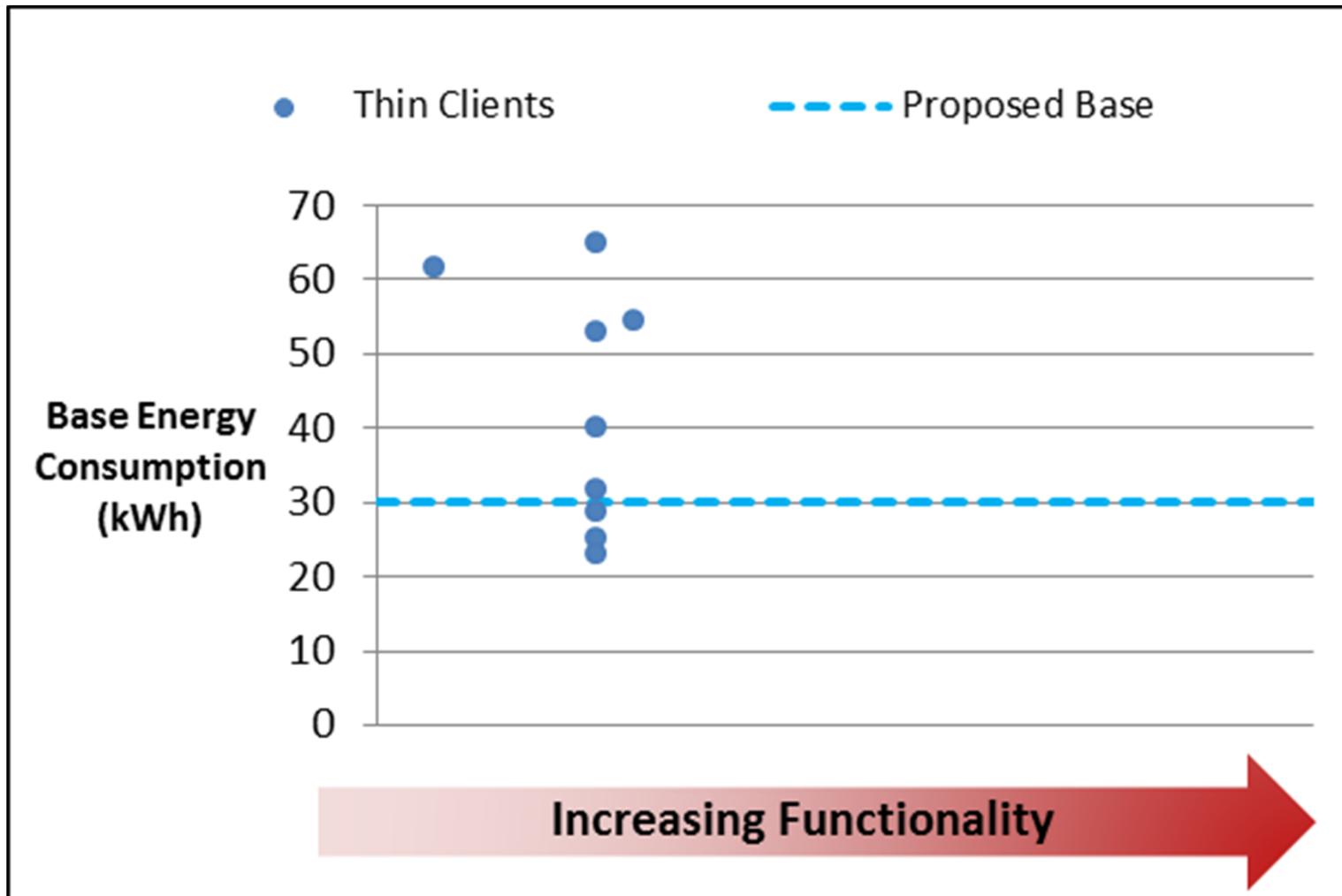
Satellite



MVPD IP



Thin Clients



Deep Sleep State Changes



- EPA proposed that models claiming the Deep Sleep Incentive enter Deep Sleep between 1 am and 5 am by default.
- Furthermore, EPA proposed that manufacturers or service providers may not prompt the user to disable deep sleep.
- Lastly, EPA proposed allowing recovery times greater than 30 seconds

Discussion of Comments



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Stakeholder Comments on the Proposal



- Stakeholders had concerns with the following parts of the proposal and sought:
- Increases to additional functionality allowances
 - DOSCIS 3.0, HEVC, HNI, Multi-room, Routers/APs
- Increases to base allowances
 - DTAs and Thin Clients
- Refinements to the Deep Sleep incentive
 - Wake to begin before 5 am to eliminate user wait time
 - Reduced prescriptiveness

DOCSIS 3.0 Comments



- Stakeholders commented that DOCSIS adder insufficient for DOCSIS 3.0
 - 1×1 energy-saving mode will be available in STBs, but not in cable modem termination system (headend)
 - Need additional 11 kWh/yr to implement DOCSIS 3.0
-
- EPA is considering an additional allowance of 11 kWh/yr until 2015, when headends can implement the 1×1 mode

High Efficiency Video Coding



- Stakeholders commented that UltraHD allowance is necessary for UltraHD capability, but will not account for High Efficiency Video Coding (HEVC)
- Request additional allowance for HEVC

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- EPA proposes to split the 20 kWh/yr previously allocated to UltraHD as follows:
 - 15 kWh/yr for UltraHD
 - 5 kWh/yr for HEVC

Home Network Interface



- Stakeholders commented in favor of increasing the HNI allowance to 20 kWh/yr
 - Additional power required by MoCA raises the power to 17 kWh/yr—round up rather than down
 - MIMO Wi-Fi interface requires higher allowance, so provide a higher HNI or a MIMO Wi-Fi “base”
-
- EPA is proposing the following changes to the HNI allowance:
 - HNI: 15 kWh/yr  17 kWh/yr

Home Network Interface (cont.)



- Additionally, EPA is proposing an increase to the MIMO Wi-Fi HNI allowance:
 - 2 kWh/yr → 3 kWh/yr for each 2.4 GHz stream
 - 7 kWh/yr → 10 kWh/yr for each 5 GHz stream



Multi-Room Definition

- Stakeholders requested further allowances for whole-home DVRs that do not meet the definition of Multi-room proposed in Draft 2
- They provided a more detailed analysis showing that some shared DVRs could save energy over standalone DVRs

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- EPA is considering editing the Multi-room definition:
The capability to provide live audio/video content to multiple devices (2 or more Clients) or support pause/time-shifting capability for otherwise standalone IP and Thin Clients within a single family living unit. This definition does not include the capability to manage gateway services for multi-subscriber scenarios.

New Networking Allowances



- EPA had provided new allowances for home networking functions in Draft 2
- Stakeholders provided further comments regarding how these allowances could be applied in the case of Multi-room STBs

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- EPA is considering further clarifying how these allowances will be applied:

*Either the ROUTER ~~or and~~ ACCESS POINT allowances may each only be applied once per STB, and must be combined with the HOME NETWORK INTERFACE **or MULTI-ROOM** allowance.*



Increases to the Base Allowances

- One stakeholder commented in favor of further increases to DTA and Thin Client base allowances



- EPA has already increased these allowances
- EPA is further concerned that increases would remove the energy-saving potential of these base types over fully-featured STBs

Deep Sleep Incentive Comments



- Stakeholders requested further changes to the Deep Sleep incentive
 - Two stakeholders commented that 30-second recovery time be restored prior to the end the scheduled Deep Sleep period, not 5 minutes after
 - Another stakeholder commented against over-constraining the incentive and recommended a similar solution to Auto Power Down (APD)
-
- EPA received additional comments Friday asking to embed the Deep Sleep incentive in the AEC.
 - As this would require a change to the test method, EPA is not considering any further changes at this time.

Next Steps to Finalization



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Anticipated V4.1 Specification Finalization Timeline



Milestone	Anticipated Date
Final Draft	Early October
Final Draft Comment Period (2 weeks)	October 2013
Final Specification	October 2013
Effective Date	August 1, 2014

Thank you!



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Contact Information



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