

REF NO.	Topic	Comment	EPA Response
1	Deep Sleep	Guidance on "clearly marked" and power indicator color convention should be provided. Since ENERGY STAR usually references IEEE 1621, and that has a crescent moon symbol to mean "sleep", then that would seem to be suitable. This might be better than using the word "sleep" since the function of the button is to move the device from "sleep" to "deep sleep".	Since the Deep Sleep concept is untested in the US market, EPA intends to allow manufacturers & service providers to identify the best implementation options for their customers. When the next market assessment is performed in advance of the Version 4 specification effective date, EPA will determine the need for any additional requirements and will work with stakeholders as necessary.
2	Deep Sleep	The differentiation of box types based on the presence of a user interface is an inappropriate method for determining how deep sleep should be activated. Regardless of whether a STB has a user interface, a physical switch or button on the remote or STB itself might be most appropriate. Alternatively the device may use a network-based notification/switch, internal timer or auto-detect via an HDMI interconnect, even if there is a user interface.	The exceptions that have been added for boxes without a user interface exist because a switch is not appropriate for a STB that is not designed to be accessible to or touched by an end-user. EPA has not changed these requirements in the final specification.
3	Deep Sleep	Section 3.2.4(iii) also states that "[a]lternate means of detection/communication must be broadly applicable and not limited to a specific brand of TV or downstream device." Instead of requiring a Deep Sleep solution to work with multiple brands of TVs, it would be more appropriate to only give credit for such STBs which are connected to devices which are able to activate Deep Sleep as appropriate for the connected STB.	Under the current program structure, there is no way for EPA to ensure that, for example, STBs that use a manufacturer-specific implementation of HDMI CEC would be installed only with compatible televisions. In light of this limitation, EPA has required that any detection/communication protocol be broadly applicable so consumers can be sure to realize the product functionality promoted by ENERGY STAR.
4	Service Provider Requirements	As it relates to the Service Provider agreement section 6, suggest that the wording be updated as follows: "When commercially reasonable, provide clear and consistent labeling of ENERGY STAR qualified set-top boxes, per the following..." While a service provider may fully support initiatives to reduce energy consumption in set-tops, it may not be appropriate or commercially reasonable to apply such labeling to every product which meets the Energy Star energy consumption allowances. Consider, for example, a set-top which meets all of the energy consumption requirements but in order to label the product would require a new software release which would not be available for several months. This product should still qualify as an Energy Star compliant product even though it is not currently labeled as such.	The ENERGY STAR label is meant only for use with products that meet all requirements at the time of manufacture. Field upgrade is also possible under the Service Provider agreement. STBs that meet ENERGY STAR requirements following a field upgrade may be counted towards the Service Provider Annual Fleet Requirement.
5	Definitions	CEE thanks EPA for revising the Home Network Interface definition to be more inclusive. The Committee believes that the new language EPA proposed in the Final Draft is more appropriate given the fast pace of technical developments in the set-top box product category. CEE also thanks EPA for further defining the general qualification criteria for Deep Sleep Mode in the Final Draft specification that was circulated on November 30 (Section 3.2.4). Having a more precise description of this mode places energy efficiency program administrators in a stronger position to assess its energy savings potential.	EPA appreciates the support of CEE and all stakeholders for their assistance and thoughtful comments through the specification development process.
6	Deep Sleep	It may be difficult to ensure and quantify any projected energy savings associated with this proposal because they are behavior dependent. CEE members that have experience with behavior-dependent programs have stated that requiring customers to "opt out" of an efficiency measure (i.e., Deep Sleep Mode is the default) rather than "opt in" (i.e., customers must press a button to activate Deep Sleep Mode) may be a more effective approach to achieving energy savings.	Given the lack of experience with STB deep sleep in the US market, EPA has chosen a blend of opt-out and opt-in approaches for use in the Version 3 specification. For service providers to claim the 1.5X purchase multiplier, a STB must have "opt-in" deep sleep capability. For manufacturers to use the deep sleep benefit in the TEC equation, a STB must have "opt-out" deep sleep functionality enabled by default. This approach is intended to offer manufacturers the most flexibility to develop good solutions for their customers without overestimating the efficiency benefits to be achieved in the "opt-in" case.
7	Effective Date	Request that EPA not break tradition by setting an effective date less than nine months after the Final Specifications are released. It is acceptable that the Version 3.0 effective date falls outside of the summer months with the expectation that this will be rectified with the Version 4.0 revision effective date.	EPA shares its Partners' desire for a smooth transition from one ENERGY STAR specification version to the next, with the objective of meeting consumer expectations that ENERGY STAR labeled products fully meet the latest requirements in effect upon their date of manufacture. With this in mind, EPA has established the following timeline: <ul style="list-style-type: none"> • Effective immediately, manufacturers may elect to have their Certification Body (CB) certify their eligible products to the Version 3.0 requirements. • After May 1, 2011, Certification Bodies will be instructed to stop certifying new product submittals to Version 2.1. Note, however, that existing certifications to Version 2.1 will remain valid for purposes of ENERGY STAR qualification until September 1, 2011. • As of September 1, 2011 any product shipped with an ENERGY STAR label must meet Version 3.0 requirements. All certifications of products to the Version 2.1 specification will be invalid for purposes of ENERGY STAR qualification and CBs will only submit product models certified to Version 3.0 to EPA.

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8	Allowances	Question the reasoning behind High Definition as the only allowance being able to be applied to the DTA base type. The definition of DTA states that it is a 'simple' box whose main functionality is to receive signals and then deliver them to a consumer display. In certain configurations, the video delivery from the service providers to the consumer display may also require advanced video decoding such as MPEG4 decoding. Therefore, suggest that an Advanced Video Processing allowance be added as an additional functionality to the DTA.	EPA believes that STBs with HD and Advanced Video Processing should be considered for qualification as one of the several more full-featured STB base types (Cable, Satellite, etc.). The DTA base type is intended specifically for STBs with little or no additional functionality.
9	Allowances	IP STB Base Type allowances for Version 3.0 and 4.0 are too stringent.	EPA's dataset for IP STBs includes a range of devices, including a number of relatively niche boxes that are not yet widely deployed. In order to create levels that are more reflective of the current market and the choices available to consumers, EPA has increased the base allowance by 5 kWh/year for IP STBs. This increase, combined with an earlier increase in allowances for other base types and the multi-room adder, should ensure that there will be a robust selection of devices available to Service Providers for implementing multi-room strategies, decreasing the aggregate consumption of STBs in the home.
10	Allowances	Multi-room and Multi-stream allowances are crucial in the success of multi-room deployment in the consumer's home. Suggests maintaining the allowances specified in Draft 2 to encourage manufacturers and service providers to implement multi-room configurations in the consumer's home.	EPA does not intend to modify these allowances in the final specification.
11	Deep Sleep	Seek clarification on the terminology "APD to Deep Sleep Enabled by Default." Our understanding of this is that in order to take credit for deep sleep state, the manufacturer must have deep sleep enabled via Auto-Power Down (APD). However, EPA states that any STB with a user interface requires a button or a switch to be used in order for the box to enter Deep Sleep state. Suggest changing the second column header to "Deep Sleep Enabled by Default".	There are two incentives offered for Deep Sleep. First, the 1.5X new purchase multiplier is offered for service providers that purchase STBs with deep sleep capability, whether that capability is enabled manually via a button, or enabled both manually and by default via APD. The second incentive is for manufacturers, who can use the deep sleep coefficient in the TEC equation <u>only</u> if deep sleep is accessible via the user button (except for STBs that are not user accessible) <u>and</u> actuated via APD by default.
12	Test Method	For IP STBs, the term "reference channel" is not entirely accurate, since the term "channel" implies a dedicated tuner setting.	EPA has added the following statement to the Test Method: "For STBs without conventional tuners (e.g., IP STBs), equivalent video content, from a source representative of typical consumer usage, shall be substituted for each channel," to clarify requirements for testing of IP STBs.
13	Test Method	Low power mode test times should be reduced from 20 minutes to 5 minutes in order to reduce overall testing time and to align more closely with similar test methods used for other ENERGY STAR electronic products.	The test durations for Sleep, APD, and Deep Sleep have been reduced to 5 minutes in the final version of the Test Method.
14	Deep Sleep	Section 1.E.3, Deep Sleep State: The definition of Deep Sleep as a power state within Sleep Mode could lead to confusion for example with the test procedure, which instructs the tester to "use the remote control to place the system in a lower power state." Suggest EPA defines Deep Sleep and Light Sleep either as two separate modes, or as two states within an overarching Sleep mode and refers to these specific states throughout the specification. Further, do not specify that the remote control should be used to put the console in Sleep, just request that the console be put in Light Sleep mode per the definition of that mode. The test method would then also provide a means to verify that a product as deployed does indeed enter the Light and Deep Sleep states as reported.	The Test Method has been modified to denote the particular sleep state that must be achieved at each point in the test. EPA will evaluate if proposed changes are needed for mode names in a future specification revision.
15	Deep Sleep	The explanatory note for deep sleep mixes a definition of the state and the mechanisms to get into it such as whether it is enabled by default. For clarity, we suggest defining only the state of Deep Sleep in section 1, and defining all requirements for how to get into Deep Sleep in section 3 as well as in the SPP Commitments as appropriate.	The annotation in question was included in final draft for explanatory purposes and has been deleted from the final specification.
16	Deep Sleep	Deep Sleep will only be effective if it provides a good-enough experience to users. Recommend that EPA requires that DVR STBs must be able to wake from Deep Sleep to perform user-requested recordings (e.g.. scheduled recording of a show) or downloads, or check for programming requests, and then automatically return to the low power state. The test method should also verify this.	At this time, EPA is leaving the details of Deep Sleep implementation up to its manufacturers and service provider partners. Section 3.2.2 of the final specification was modified to allow for "Maintenance Activities" in Deep Sleep as well as Sleep.
17	Deep Sleep	Support the ability for the end-user to disable Deep Sleep, but recommend the requirements clearly state that the user should not be encouraged or prompted by the device to disable Deep Sleep functionality at any time. The effectiveness of power management depends on the majority of users keeping APD enabled.	EPA intends to evaluate additional requirements around Deep Sleep implementation in a future revision of the specification.
18	Deep Sleep	The use of TAPD1, PAPD, TAPD2 and PDEEP_SLEEP in the TEC equation is confusing. Suggest renaming the variables to clarify.	A minor change was made to the terminology in the TEC formula in response to this request. However, the original "APD" and "Sleep" terms have been maintained in Version 3.0 to be consistent with the Test Method and to allow qualifying product data to be easily compared over time.
19	Deep Sleep	Scenarios where both "APD to Sleep" and "APD to Deep Sleep" are enabled by default can be envisaged but are not intuitive. One can imagine such a scenario if a the service provider deploys a time based solution whereby in the middle of the night the box APDs to a very low power state with slower resume times, and then shifts to a light sleep with higher APD value after 8 am or 5 pm to make sure the TV can power up quickly and change channels when the user returns.	The scenario described in this comment sounds reasonable, but EPA believes that manufacturers and service providers are best able to define appropriate use cases for Deep Sleep.
20	Test Method	What is meant by "non qualification" testing?	This term was included in error and the text has been corrected.

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21	Test Method	EPA could improve clarity by stating "Any features not identified..." vs. "Any features not tested in this test procedure should be tested..."	This change has been incorporated in the final test method.
22	Test Method	Does the term "preference" imply that the priority order is optional?	EPA has changed the term to "order of precedence" so as not to imply that the priority order is optional.
23	Service Provider Requirements	The Service Provider (SP) incentive does not clearly require Deep Sleep to be enabled by default as deployed in users homes, just that "purchases of STBs with Deep Sleep capability receive a 50% premium". Suggest that the manufacturer incentive requires that the STB is shipped with the capability enabled by default, and for the SP incentive it is deployed with the capability enabled by default.	Deep Sleep capability must be present in order for a Service Provider to claim the new purchase benefit - not necessarily "enabled by default". The Service Provider is required to maintain the box in a qualified configuration for deployment under the terms of their Partner Agreement.
24	Other	Recommend that EPA consider the following requirement in the next revision: Incent service providers to deploy STBs that have the capability to stream content directly to internet-enabled TVs. The objective is to eliminate the need for thin client STBs, thereby reducing total household energy consumption.	EPA intends to assess the opportunity for direct-connected TVs in the STB ecosystem in a future specification revision and will continue to monitor market developments in this area.
25	Service Provider Requirements	Add 10.2.3 to the Service Provider Agreement, as follows: 10.2. Perform outreach to educate subscribers and potential subscribers about ENERGY STAR and Partner's commitment to the program. Outreach methods must include, but are not limited to: 10.2.3. Providing guidance to consumers who may not have a qualified STB on how to obtain or request an ENERGY STAR rated STB.	Under the terms of the ENERGY STAR Partner Commitments, a Service Provider would be welcome to provide the described guidance to its customers. EPA encourages such creative promotion of the brand by all of its partners. However, this will not be included as a mandatory Service Provider requirement in the Version 3.0 specification.
26	Service Provider Requirements	Add 10.3.4 and 10.3.5 to the Service Provider Agreement, as follows: 10.3. Train sales staff, customer service representatives, and installation contractors on topics related to the ENERGY STAR program. This training shall include, at a minimum: 10.3.4. Instruction regarding how to discern whether or not a box is ENERGY STAR qualified upon customer inquiry 10.3.5. Guidance regarding how to obtain or request an ENERGY STAR qualified box	Under the terms of the ENERGY STAR Partner Commitments, a Service Provider would be welcome to provide the described training to its staff. However, this will not be included as a mandatory Service Provider requirement in the Version 3.0 specification.