Ref. #	Topic	Subtopic	Comment Summary	Response
1	Scope		One stakeholder supports EPA's approach to revise requirements for notebooks, slates and tablets, thin clients, and internal power supplies, to encourage adoption of very low power network capable modes, and to wait until the Version 8.0 specification to revise desktop requirements. However, this stakeholder urges EPA to begin gathering data and developing the Version 8.0 specification as soon as possible, as desktops are responsible for the majority of computer energy use. This stakeholder is developing a dataset that is intended to support energy efficiency activities around desktop computers, and will share this dataset with the ENERGY STAR team soon.	EPA thanks stakeholders for their effort to help collect any product data that can help better inform updated desktop criteria in Version 8.0. EPA is always interested in new product data that can help inform active and future specification development and looks forward to reviewing the described dataset with the stakeholder.
2	Scope	Version 8	One stakeholder encourages EPA to move forward as expeditiously as possible with Version 7.0 development so that Version 8.0 development can commence. The stakeholder encourages EPA to adopt new, expandability-based categories for desktops and to extend desktop power supply efficiency requirements to lower load fractions.	EPA's goal is to finalize the Version 7.0 revision by the end of calendar year 2017, and plans to begin informal Version 8.0 development at the tail end of this year, with formal specification development launching near the effective date of Version 7.0.
3	Scope		One stakeholder believes that EPA can adjust the TEC requirements now to ensure the specification covers the top 25% of most efficient products on the market without needing to wait for the Version 8.0 specification. This stakeholder cited the comment on the draft specification stating that market penetration is at 40%, and states that waiting for major changes in Version 8.0 appears to be in conflict with ENERGY STAR's general principal of targeting the top 25% of most efficient products on the market. This stakeholder also states that failing to amend the TEC requirements for desktops and integrated desktops could have unintended consequences, including having more desktops listed on the QPL due to the less stringent requirements for these product types. This could result in consumers purchasing desktops over notebook computers due to incorrect assumptions about efficiency levels or because it is easier to identify ENERGY STAR desktops. In addition, other mandatory initiatives with more stringent requirements may come into effect prior to the ENERGY STAR Version 8.0 specification, which could result in loss of reputation for the ENERGY STAR program.	EPA is expediting the development of notebook and thin client requirements through an accelerated Version 7.0 development because both existing levels are far too conservative for products available on the market, as evidenced by market share exceeding 80%, and the structure for assessing them is not changing. Desktops are a more complicated topic with a shift likely needed in the categorization implemented and data needed to create more effective requirements. Because this complexity requires additional time, it has been shifted to a soon to follow Version 8.0 development. This allows the program to reduce the market penetration where it is the highest while allowing for further development time to discuss the categorization system for desktops. A note of clarification, EPA aims to recognize the top 25% of products when establishing new requirements, however, the Agency works to ensure this share of the market grows over time reflecting a market transformed to greater efficiency.
4	Pass rates	Notebook	One stakeholder commented that they generally supported ENERGY STAR's approach on notebooks, but urged EPA to set levels at a 10-15% pass rate against the dataset in order to achieve a 25% pass rate by the effective date. In earlier versions, this stakeholder has seen products, especially notebooks, rapidly adjust to the requirements and achieve penetration rates in the high nineties. Setting the requirements at levels so that 10-15% of the current QPL could meet will provide better assurance to consumers that ENERGY STAR products are among the most efficient on the market.	EPA intends to maintain it's approach of setting notebooks requirements to address the top quartile of products available on the market upon finalization of Version 7.0. EPA has removed data from products older than 2015 in order to focus primarily on the latest generation of products currently being sold.
5	Pass rates		One stakeholder emphasized the importance of setting a pass rate of 25% at the time the requirements are set, in order to ensure that specification is not obsolete soon after the effective date.	EPA has revised some of the notebook adders in Draft 2 and has adjusted the base allowances as well to better arrive at top quartile pass rates in each of the three major notebook categories.

Ref. #	Topic	Subtopic	Comment Summary	Response
6	Version 8 Comments	Idle and Active requirements	Two stakeholders made recommendations for the Version 8.0 specification regarding the idle and active requirements in the test method. The first stakeholder stated that Version 8.0 should address the issue that the Version 6.0 test method is becoming increasingly non-representative of real-world energy use, because short and idle states defined by ENERGY STAR are not adequate proxies for real-world energy use. This stakeholder, along with other partners, is developing a new real-world idle and low-intensity active energy use benchmark, and urges EPA to adopt this new active model for testing and reporting-only in Version 8.0, with the purpose to set levels in Version 9.0. Similar to the first stakeholder, the second stakeholder also encouraged EPA to include more realistic idle mode and "light" active mode testing in its Version 8 specification.	EPA thanks stakeholders for their feedback on the upcoming Version 8.0 development. EPA is aware of the development of real-world idle and low-intensity active mode test method development and will continue to monitor the developmental process of these metrics for consideration at a future date.
7	Version 8 Comments		One stakeholder commented on other revisions that should be made in the Version 8.0 specification. This stakeholder encouraged EPA to lay the groundwork now for the Version 8.0 specification by beginning data collection now that includes product expandability attributes. EPA should initiate a call for desktop computer data concurrent with the Version 7.0 revision process. This stakeholder recommends capturing the attributes required under the CEC Title 20 regulations at minimum. This stakeholder also outlines the necessity to update the PSU requirements for desktops. The stakeholder acknowledges that this requirement may not be added until Version 8.0, but urges EPA to take steps toward this revision now. These steps include working with industry stakeholders to identify low-load test points and any associated instrumentation requirements. EPA should also be collecting desktop PSU efficiency data at new low-load conditions.	EPA intends to collect information on additional fields in line with the product attributes collected through the CEC regulation. This step will both align the two data sets more closely and provide additional useful information to end-users utilizing the ENERGY STAR certified product list.
8	QPL Structure	Notebook	Regarding the QPX structure, one stakeholder recommended a 2-configutation approach for computers to be implemented by adding a single column that specifies if the entry is a Typical or Worst-Case model.	EPA thanks the stakeholder for this comment and will consider it during the QPX development for Version 7.0 later this year.
9	Certification requirements		One stakeholder recommends that the certification requirements are modified to ensure that representative models are actually offered for purchase through normal retail channels in the exact configuration certified.	A primary requirement of a product being certified as ENERGY STAR is that it is available in the US and/or Canadian market. This includes the representative model tested for certification purposes. If stakeholders are finding examples of tested ENERGY STAR computer configurations that are not available in the US and/or Canadian market, please contact EPA at computers@energystar.gov and ENERGY STAR will investigate further.
10	Display brightness		One stakeholder urged EPA to update the test method to test notebooks and all-in-one desktop computers with brightness settings as shipped, with a minimum brightness level. This will avoid an incentive to ship with very low brightness levels just to qualify for ENERGY STAR.	EPA does not have data on hand to support what new brightness level would be appropriate to test notebooks and portable all-in-one computers. EPA welcomes additional stakeholder feedback to better address this concern in the future.

Ref. #	Topic	Subtopic	Comment Summary	Response
11	Definitions	Desktop Workstation Definition	One stakeholder commented that the definition of Desktop Workstations could be viewed as outdated, especially in terms of references to PCI slots. This stakeholder provided a suggested new definition, which is based on the Californian Regulation definition, but includes small technical changes. Another stakeholder recommends harmonizing the desktop workstation definition with industry recommendations and also provides a proposed definition.	EPA has proposed a revised workstation definition which more closely aligns with the spirit of the CEC workstation definition, while maintaining aspects important to the ENERGY STAR program.
12	Definitions	Interactive Displays Definition	One stakeholder commented on the Interactive Displays definition. This stakeholder stated that industry needs more information about the products EPA believes would be classified as "Interactive Displays." This stakeholder also recommends that Interactive Displays are excluded from the scope of the specification. The stakeholder is open to working with EPA to include this product type under the Displays specification.	After discussions with the ENERGY STAR display team, that team will lead the clarification and definition of interactive displays as part of the next ENERGY STAR display specific revision. Currently, interactive displays are addressed within that scope, which excludes it from the ENERGY STAR computers specification scope.
13	Definitions	Mobile Workstations	One stakeholder proposed the adoption of the CEC definition and qualification criteria for "Mobile Workstations" This stakeholder also recommended that EPA adopt CEC's criteria to qualify mobile workstation under ENERGY STAR, which requires use of external power supply that meets federally regulated level VI efficiency criteria, incorporates energy efficiency Ethernet functionality, and power management to transition connected display and system in to sleep mode or alternative sleep mode with a maximum power demand. This stakeholder believes that there should be no TEC limits for mobile workstations.	EPA has adopted a new definition for mobile workstations which aligns closely with the proposed CEC definition, while including aspects important to the ENERGY STAR program. However, EPA has excluded these products from the current ENERGY STAR scope. EPA does not have enough information on these products to determine if the stakeholder proposal effectively differentiates this market. It is believed that by aligning with the CEC criteria there would not be enough differentiation to include these products into scope. EPA welcomes further data in support of any further proposals.
14	Definitions	Desktop Computer definition	One stakeholder proposed to add "touch display" and the ability to input information to the Desktop Computer definition	EPA does not feel that adding touch display to the definition of desktop computer is appropriate, though adding that language to the integrated desktop computer sub definition could be explored if it adds value to that definition. EPA welcomes feedback on this through the Draft 2 stakeholder written feedback.
15	Definitions	Discrete Graphics Definition	One stakeholder supports the suggested change to the discrete graphics definition, as this will ensure adequate division between discrete graphics solutions connected via PCI-e and integrated graphics included on the CPU die, which each have different power demand requirements and savings capabilities. Another stakeholder requests the deletion of the portion of the definition which states that discrete GPUs are not packages on the same die or substrate as the CPU. ENERGY STAR should not limit packaging design options for computers, as this could limit future choices for both manufacturers and consumers and reduce competition and innovation in the marketplace.	EPA received stakeholder feedback indicating that the proposed change to the dGfx definition in Draft 1 could adversely impact future GPU packaging implementations which may allow additional efficiency improvements. As a result, EPA is proposing to revert to the previous version of the definition, but clarifying that in order to be considered dGfx, the GPU cannot share memory resources with the CPU.
16	Definitions	Portable All-In-One Computer Definition	One stakeholder requests the removal of the word "limited" from the Portable All-In-One Computer definition.	EPA is proposing to remove this term from the portable all-in-one computer definition in Draft 2. However, EPA is proposing to adjust the definition to include products that have longer battery lifetimes, while still including the existing products that feature "limited" portability.
17	Definitions	Additional Internal Storage definition	One stakeholder commented that the definition "Additional Internal Storage" should be changed to the Californian Regulation definition. This would limit the ability to apply a large adder to a primary hard drive that already has a smaller SSD.	EPA is proposing to align with the CEC definition on additional internal storage in Draft 2.

Ref. #	Topic	Subtopic	Comment Summary	Response
18	Internal Power Supplies		One stakeholder strongly supported EPA's proposal to require 80-PLUS Gold efficiency level in ENERGY STAR Version 7.0, and to provide an incentive at Platinum and Titanium efficiency levels. This stakeholder also encouraged EPA to add a low-load test point for mandatory reporting in version 7. The stakeholder suggested including a "test and list" requirement for this low-load test point in Version 7.0 and adding an efficiency requirement for the low-load test point in future specifications. The stakeholder believes it is important to align IPS efficiency requirements with real-world loads, and encourages EPA to take the above steps to ensure this happens. This stakeholder also urges EPA to extend the power factor requirements to the 20% and 50% load points. This will prevent manufacturers from disabling power factor below 100% to achieve efficiency levels. The stakeholder states that computers rarely operate at 100% load, so this point is not reflective of real world energy use. The stakeholder states the importance of avoiding power factors of .5 or lower, which are commonly found in IPS today. Another stakeholder states that IPS efficiency at 10% loading should be considered in the Version 7.0 specification and that a 10% load efficiency at 84% would allow 80Plus Gold IPS to pass the requirement. They are supportive of the IPS efficiency requirements that match the 80Plus Gold efficiency requirement. The stakeholder requests that the specification is altered to reflect the correct 80Plus Gold Level efficiency requirements for the EU.	EPA does not have data to support additional low load IPS requirements in Version 7.0 for desktops. EPA welcomes data that help inform additional IPS low load requirements, if appropriate. If stakeholders have additional proposals regarding how to collect this information, EPA is open to alternative approaches.
19	Internal Power Supplies		One stakeholder commented that the Load Rating for Power Factor Correction (PFC) at 0.9 should be at 50% Load not at 100% load, to harmonize with California Energy Commission and Ecova 80Plus Internal Power Supply efficiency requirements. This stakeholder also reiterated their position that ENERGY STAR should focus on system level energy consumption rather than IPS efficiency levels. The system maker decision not to design-in a more expensive, high grade IPS is based on energy efficiency and cost trade-offs for a given market segment. This stakeholder stated that, if EPA decides to revise the IPS levels, the changes to IPS should be addressed in the Version 8.0 specification. The stakeholder states that EPA has not provided data to justify its proposal to jump 2 levels from the current 80Plus Bronze to 80Plus Gold level.	EPA has made a slight revision to the 80Plus Gold equivalent requirements in Table 2, clarifying that the 0.90 minimum power factor requirement is applicable at 50% load, aligning with the 80Plus website. EPA performed a review of third party IPS offerings on consumer sites and found that while there does appear to be a significant cost difference in Bronze vs. Gold options for IPSs with nameplate rating below 500 watts, that above 500 watts the difference is small, and even found examples above 800 watts where the cheapest Gold option was slightly less than a comparable Bronze equivalent product. As a result of this investigation, EPA is proposing to revert to 80Plus Bronze in Version 7.0 for IPSs of 500 watts and below, where the cost increase starts to become more prevalent, but maintaining the 80Plus Gold equivalent levels for IPSs above 500 watts. EPA will revisit the requirements for the lower power IPSs in Version 8.0 to see if they warrant additional stringency at that time. EPA welcomes stakeholder IPS energy efficiency and cost data that conflicts with the Agency's findings.
20	Power Management Requirements		One stakeholder requests to change the language in the power management requirements to cover Ethernet network connections with higher speeds	EPA has proposed this clarification in Draft 2.
21	Integrated Display Adder	TEC Limits for Notebooks	One stakeholder would like to see the integrated display adder equation for notebooks be the same as what it is in the CEC Computer Regulation for Notebooks.	EPA has proposed this revision of the notebook integrated display adder in Draft 2.

Ref. #	Topic	Subtopic	Comment Summary	Response
22	Integrated Display Adder	TEC Limits - Adder Allowances	One stakeholder commented that the integrated display allowances for both integrated desktops and notebook computers appear to be too large. They suggest that the allowances are based on the deltas between short and long idle for computers in the ENERGY STAR database, whilst also considering other factors which contribute to the short/long idle delta. This stakeholder would appreciate the opportunity to review the background data that the EPA has used to inform their decision making on these additional display allowances.	EPA has proposed notebook integrated display adders that align with the latest CEC regulatory effort. EPA is not changing adders for integrated desktops in Version 7.0, as they will be addressed in the Version 8.0 revision.
23	Allowance for Enhanced-performance Integrated Displays		One stakeholder noted that EPA has carried over the Version 6.1 EPD allowances and needs access to the data that informed EPA's proposed EPD allowances. The stakeholder's analysis suggests that these allowances are too generous.	EPA's analysis of the qualified product list did not show that current EPD adders are too high for notebooks computers, which are the only EPD adders currently being considered for revision. EPA welcomes additional data supporting a tightening of these adders.
24	Memory adder	Notebook	One stakeholder is concerned that the proposed memory adder structure and levels, combined with the requirement to report only the highest energy configuration per representative model for product families, does not provide a representative picture of the energy use and compliance margin of typical products. The stakeholder proposed different memory adders and reporting requirements to address this issue.	EPA would like to remind stakeholders that the energy requirements apply to all configurations certified in the family, not only the representative model. While the representative model information is what is displayed on the qualified product list and product finder tools, any other models in the family including in the additional model information field are subject to the same energy requirements specific to the details of each configuration within the family.
25	Low Power Modes		One stakeholder recommends that EPA simplify and clarify its approach in dealing with network-connected low power modes. The stakeholder recommends that EPA limit the applicability of the alternative low power mode approach in its Draft 2 language, prohibiting products with Modern Standby and Power Nap from utilizing this provision and clarifying that those products must certify using the Full Network Connectivity provisions.	EPA's intent in Version 7.0 is that products with alternative very low power modes that display energy usage as good as or better than traditional sleep mode measurements while maintaining network connectivity should be able to claim the full capability network proxy mode weighting. Allowing only the ECMA-393 proxy solution to claim the full capability network proxy mode weighting is too restrictive given the new solutions on the horizon, and the lack of industry adoption of ECMA-393.
26	Low Power Modes		One stakeholder recommends that EPA retain the conventional weighting and full network connectivity definition in line with Version 6.0. The stakeholder requests to remove the 2W LPM requirement as part of the Full Network Connectivity definition or adopt the alternative sleep mode limits adopted by CEC in CEC regulation 1 with a January 1, 2019 effective date.	EPA maintains that opening up the scope of the full capability network proxy mode weighting in Version 7.0 allows more flexibility for new solutions to claim that mode weighting as appropriate (consuming sleep mode like levels of energy, or less). Products that cannot meet the definition can certify under conventional mode weightings as they would have in Version 6.0/6.1 without any penalty. A primary purpose of this revision is to reward use of low power modes unlike like with a standard. Thus it is appropriate to take a different approach than that used by the CEC.
27	Low Power Modes		One stakeholder recognizes that new power mode definitions will need to be included to reflect the desired changes to the specification, related to the low power modes being developed. This stakeholder also suggested that the specification contain requirements on ensuring continued operational effectiveness of power management functionality during use. This stakeholder also suggested that further consideration is given to both wake times and reliability of modern standby type technologies during specification development.	EPA is interested in refining the definitions related to very low power network capable modes, and adding validation of their presence and/or functionality, but given the time required to gain consensus on these issues, EPA intends to address these topics in Version 8.0 if additional stakeholder data and feedback allows.
28	Energy Efficient Ethernet (EEE) incentive		One stakeholder recommended that EPA tighten language for the Energy Efficient Ethernet (EEE) incentive by requiring that EEE technology is not only supported, but enabled as shipped.	EPA has adopted this clarification in Draft 2.

Ref. #	Topic	Subtopic	Comment Summary	Response
29	TEC Limits for Notebooks - Hybrid graphics		One stakeholder stated the necessity for a TEC adder for Notebooks configured with dGPUs even when in hybrid graphics mode, particularly for Notebooks configured with dGPUs within the G5, G6, and G7 classes. Without an appropriate adder, this stakeholder stated that no high end Notebooks configured with dGPUs could meet the proposed specification.	EPA reviewed the data set with the latest combination of notebook base allowances and adders proposed in Draft 2, which includes referencing the CEC equation for discrete graphics adder rather than granular values for G1 through G7 as proposed in Draft 1. EPA found that the pass rates resulting from this change for products with G5, G6, and G7 discrete graphics capability were at or exceeding the pass rates of the notebook category 2 products overall. EPA requested additional data to support an additional hybrid graphics adder but did not receive any supporting information to further consider this proposal.
30	dGfx adder	TEC Limits - Adder Allowances	One stakeholder commented that a formula based approach limits stepped increases in adders between the different dGfx categories, and that the adder allowances warrant further review.	EPA has fully harmonized with the CEC formula for discrete graphics notebook adders in Draft 2, as that adder is based on the latest available data provided by manufacturers on discrete graphics components available in notebooks.
31	TEC Limits for Notebooks		One stakeholder commented that EPA's analysis contained errors in the memory adder and display adder formulas. This stakeholder recommended that EPA adopt the corrected base TEC limits that the stakeholder provided in a table. This stakeholder also states that, even after correcting the errors, this proposal calls for significantly reducing the Notebook's base TEC limits, which will put additional constraint on the rest of the notebook system to ensure the capability adders are properly sized. This stakeholder stated that reducing the TEC requirement may be appropriate only if there are appropriate allowances for additional features on the platform. Cutting the base TEC without providing additional adders will inhibit innovation by precluding features.	EPA has adjusted the discrete graphics, memory, and integrated display adders to ensure top quartile recognition of the market. While the Draft 2 base allowances appear higher than in Draft 1, a mistake that was present in the memory adder in Draft 1 analysis has been corrected, so the overall requirements are now more stringent in Draft 2.
32	TEC Limits for Notebooks		One stakeholder is strongly supportive of reducing the number of notebook categories, and desires even further simplification, with the ultimate goal of being agnostic of categories. The stakeholder is also supportive of reducing base TEC but requires more data to formulate an opinion on actual TEC values.	EPA appreciates the stakeholder's comment but could not identify a method of further simplifying the current category system based on the data.
33	TEC Limits for Notebooks - Ethernet cards		One stakeholder commented that commercial notebooks still require both WLAN and Ethernet card support, and therefore it would be appropriate to eliminate the Ethernet connection requirement and only require use of WLAN in the ENERGY STAR test procedure. As an alternative, this stakeholder states that EPA could propose a GbE adder for notebooks that support Ethernet cards.	EPA does not have enough data to eliminate the Ethernet connect requirement and only use WLAN in the ENERGY STAR test procedure, nor to potentially identify an appropriate adder for notebooks that support Ethernet cards.
34	Internal Storage allowance	TEC Limits - Adder Allowances	One stakeholder commented that internal storage allowance for desktop and integrated desktop computers appears to be too large. The stakeholder states that the Californian approach should be adopted and the allowances should be split out into different types of secondary storage devices.	EPA is not revising desktop and integrated desktop adders in Version 7.0, those product types will be addressed in the following Version 8.0 revision and EPA will consider this comment during that forthcoming revision.
35	TEC requirement for Thin Clients	TEC Base for Thin Clients	One stakeholder supported receding the TEC Requirement for Thin Clients. However, the 31 kWh proposal will limit Thin Clients to low performance machines only, which will have adverse consequences. The stakeholder proposed either pushing out the establishment of TEC limits, adders and potentially categories until Version 8, or revising Base TEC and providing appropriate Adders for Thin Clients under Version 7.	The ENERGY STAR data set, made up of the current qualified product list, does not support this claim. EPA requested additional feedback from stakeholders, but did not receive data that supported changing the Draft 1 proposal. EPA re-evaluated the thin client data levels as proposed in Draft 1 and found that they capture both low and and high end thin client products. EPA received a proposal to change the Version 6.0/6.1 formatting structure, but has determined that this approach adds needless complexity to the requirements and does not better differentiate products. Therefore, the thin client proposal has not changed from Draft 1.

Ref. #	Topic	Subtopic	Comment Summary	Response
36	International Market Certification		One stakeholder suggests adding language to International Market Certification section that stipulates that products and all applicable components (such as IPSs) should be tested for each market in which they will be sold and promoted as ENERGY STAR.	EPA intends for the ENERGY STAR requirements to have equivalent meaning regardless of where the product is sold. Furthermore, the product will be tested with the IPS.