January 27, 2023

Ryan Fogle
Office of Air and Radiation
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Topic: Discussion Guide for ENERGY STAR® Computers Specification Version 9.0

Dear Mr. Fogle:

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE) in response to the United States (U.S.) Environmental Protection Agency (EPA) request for comments on the ENERGY STAR® Computer Specification Version 9.0 Discussion Guide.

The signatories of this letter, collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), represent some of the largest utility companies in the Western U.S., serving over 32 million customers. As energy companies, we understand the potential of appliance efficiency standards to cut costs and reduce consumption while maintaining or increasing consumer utility of products. We have a responsibility to our customers to advocate for standards that accurately reflect the climate and conditions of our respective service areas.

We appreciate this opportunity to provide comments to EPA before its first draft of the Computers Specification Version 9.0. We fully support updates and revisions to the specification, allowing EPA to recognize the most efficient products in this ever-changing market. We urge the EPA to consider the following comments as it develops the revised specification.

1. **The CA IOUs recommend that EPA reduce pass rates by tightening base allowances and functional adders where appropriate.**

   The latest available unit shipment data for ENERGY STAR computers indicates that 42 percent of desktops, 85 percent of notebooks, and 42 percent of workstations shipped in 2021 were ENERGY STAR-qualified products.[1] EPA should reduce base allowances and adders for Version 9.0 so that an appropriate proportion of products (typically 25 percent) would meet the requirements. We request that EPA publish a Data Analysis Package for future iterations of this specification similar to the package published during Version 8.0 development, allowing stakeholders to conduct analyses and make specific recommendations on the adder levels.

[1] U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE), "ENERGY STAR® Program Requirements for Computers Partner Commitments," ENERGY STAR, n.d. https://www.energystar.gov/sites/default/files/asset/document/2021%20Unit%20Shipment%20Data%20Summary%20Report_0.pdf.

In the absence of an EPA-provided dataset, the CA IOUs recommend that EPA adopt base allowances and adders the same as or lower than the mandatory regulation for computers first adopted into California Energy Commission's (CEC) Appliance Efficiency Regulations (Title 20) and subsequently by nine additional states and the District of Columbia.[2] Based on our preliminary analysis, we recommend that EPA reduce Version 9 system memory and discrete graphics adders, which are generally higher than the Title 20 adders.

ENERGY STAR memory adders for desktop, integrated desktop, and notebook systems are larger than the Title 20 memory adder and should be reduced in Version 9 (Figure 1). EPA may reduce the energy use of memory by applying new technology, e.g., in theory, the latest DDR5 memory technology can consume 15 percent less power by using a lower supply voltage than DDR4 (1.1 V vs. 1.2V).

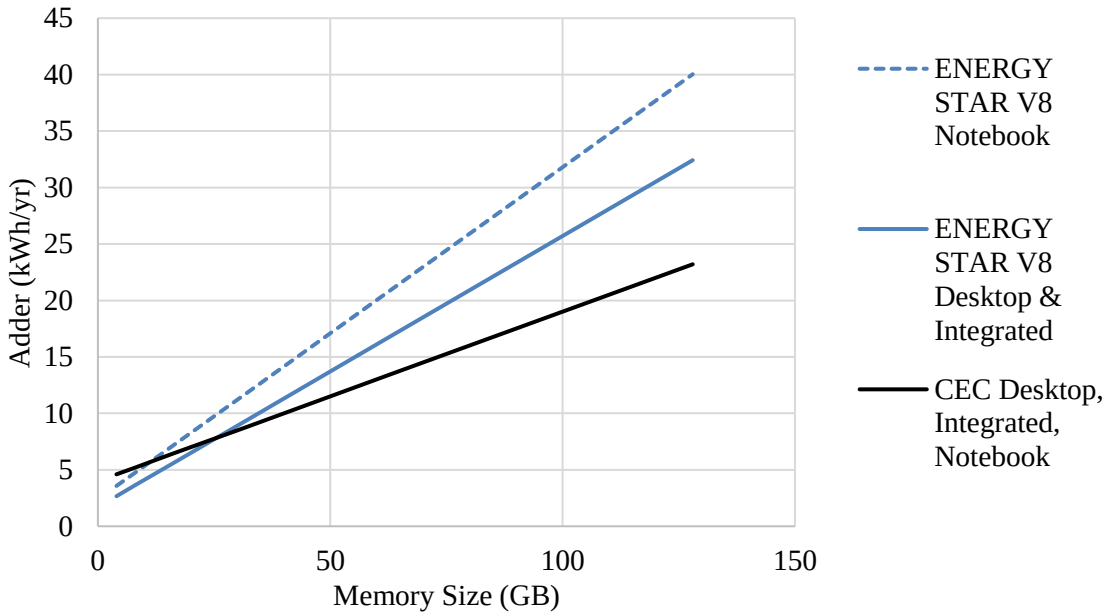



**Figure 1: System memory adders for desktop, integrated desktop, and notebook computers in the ENERGY STAR Version 8 (V8) specification and Title 20.**
Source: CA IOU analysis of ENERGY STAR V8 specification[3] and Title 20.[4]

[2] "State Standards," Appliance Standards Awareness Project (ASAP), n.d., https://appliance-standards.org/states.
[3] U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (DOE), "ENERGY STAR® Program Requirements for Computers Partner Commitments," ENERGY STAR, n.d. https://www.energystar.gov/sites/default/files/asset/document/ENERGY%20STAR%20Computers%20Version%208.0%20Final%20Specification%20Rev.%20July%202022.pdf.
[4] Thomson Reuters Westlaw, "§ 1605.3. State Standards for Non-Federally Regulated Appliances," California Code of Regulations, n.d. https://govt.westlaw.com/calregs/Document/ID57ED4435CCE11EC9220000D3A7C4BC3?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)&bhcp=1.

Version 8.0 discrete graphics adders are also considerably larger than the CEC regulation adders (Figure 2). We encourage EPA to reduce discrete graphics adders and maintain the asymptotic limit that progressively requires more efficiency from higher performance (and generally high cost) components.

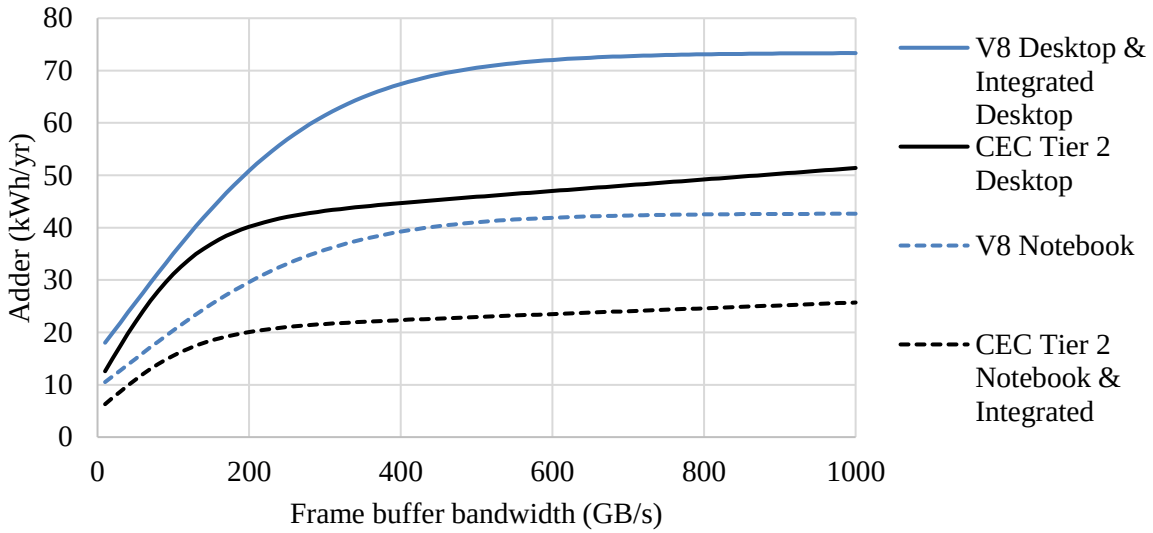



**Figure 2: ENERGY STAR Version 8 (V8) specification and the Title 20 by system type.**
Source: CA IOU analysis of ENERGY STAR V8 specification and Title 20.

**2. The CA IOUs support increasing efficiency requirements for internal power supplies.**

In the discussion guide, EPA proposes to increase internal power supply (IPS) efficiency requirements (i.e., 80 PLUS Bronze to Silver (equivalent if IPS output power is 500 watts (W) or less) and Gold to Platinum (equivalent if greater than 500 W)). A review of 80 PLUS-certified IPS indicates these more efficient IPS are available for computer use. Since 2018, 64 percent of 500 W and smaller IPS certified by the program earned Silver or higher badge levels, and 22 percent of IPS larger than 500 W, Platinum or Titanium levels (Figure 3).

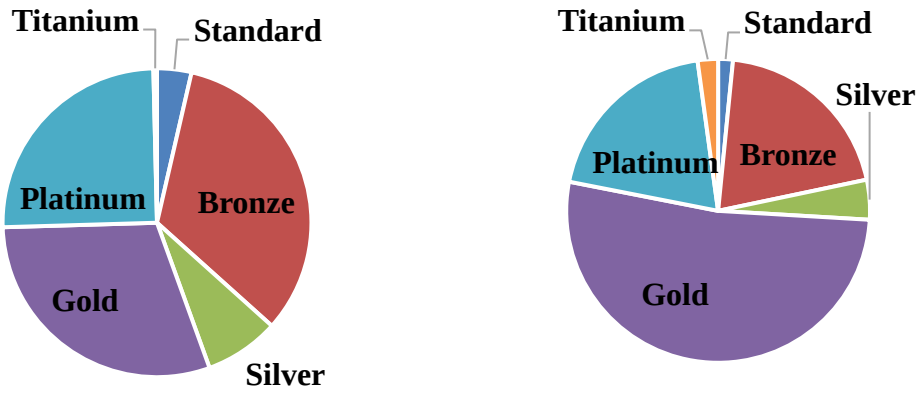



**Figure 3: 80 PLUS certified IPS from 2018 to 2022 by size and badge level.**
Note: 500W and smaller (L), greater than 500 W (R)
Source: CA IOU analysis of 80 PLUS certified 115 Volt IPS.[5]

### 3. The CA IOUs recommend adding a low-load IPS efficiency measurement.

During the Version 8 Specification development, we suggested that EPA adopt a low-load efficiency measurement to represent IPS efficiency better at idle loads.[6] Our previous analysis showed that most computers idle at about four to eight percent load,[7] and we expect these load levels to decrease further in response to the CEC regulation. CLEAResult and the Electric Power Research Institute (EPRI), which administers the 80 PLUS program, gathered data indicating a wide range of efficiency at low loads. Therefore, this data suggests that efficiency improvements may be possible through low-load efficiency requirements or by decreasing typical energy consumption requirements that encourage efficient power conversion at low loads (Figure 4). Collecting a five percent load efficiency measurement will assist EPA and stakeholders in determining the energy savings opportunity associated with improving low-load efficiency, and to develop appropriate targets to encourage those savings in future specifications.

[5] "80 PLUS® Certified Power Supplies and Manufacturers," CLEAResult, n.d.,https://www.clearesult.com/80plus/manufacturers/115V-Internal.
[6] California Investor-Owned Utilities, "Discussion Guide - ENERGY STAR® Computer Specification Version 8.0," February 26, 2019. https://www.energystar.gov/sites/default/files/asset/document/CA%20IOUs%20ENERGY%20STAR%20Computers%20v8.0%20Discussion%20Guide%20Comment%20Letter_Final_2019-02-26.pdf.
[7] California Investor-owned Utilities, "Power Supply Loading Analysis and Low-Load Testing Proposal," January 24, 2018, https://www.energystar.gov/sites/default/files/asset/document/Xergy%20Computers%20Low%20Load%20IPS%20Slides.pdf.

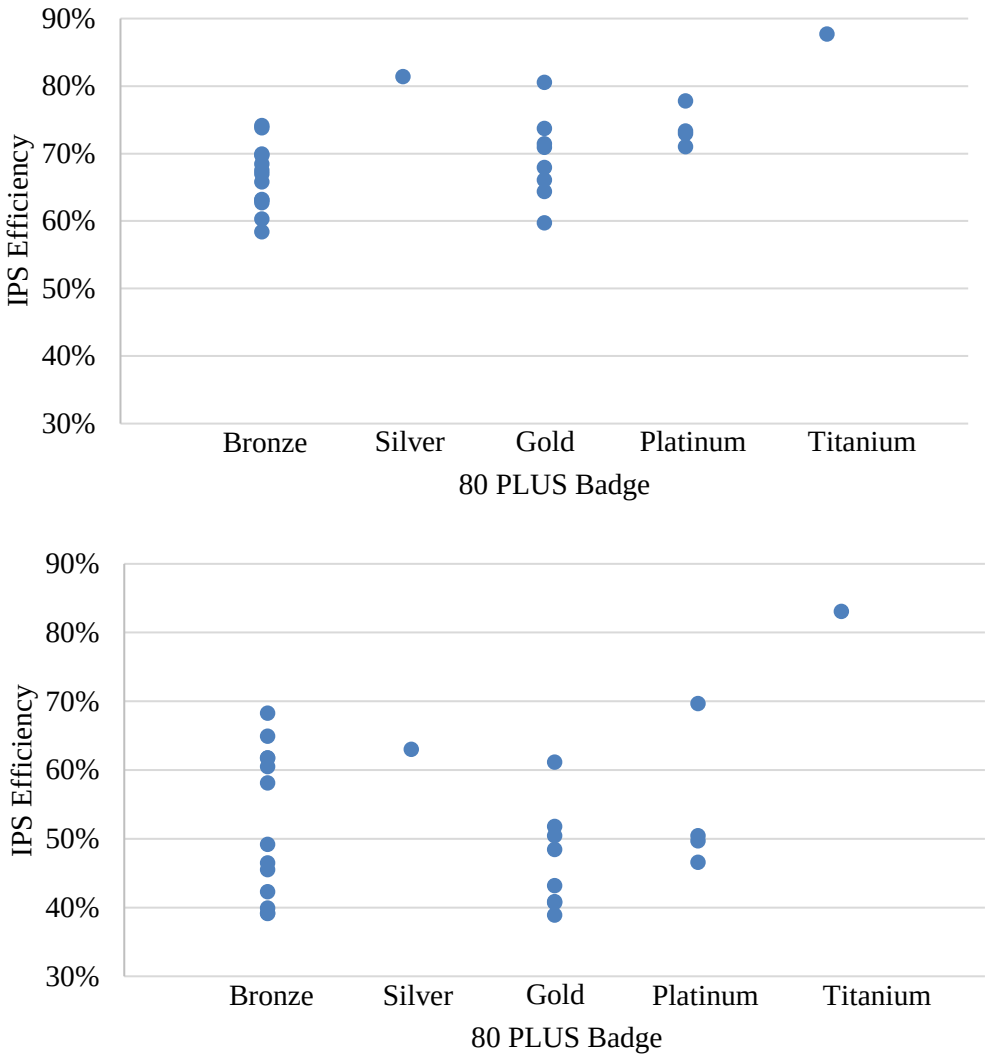


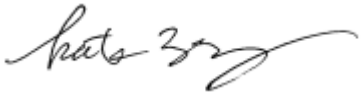

**Figure 3: Measured IPS efficiency at low (five percent and three percent) load.**
Note: Five percent load (Top), three percent load (Bottom)
Source: CA IOU analysis of CLEAResult/EPRI power supply measurements, available in CLEAResult, EPRI, 2018. "Updated and expanded results from laboratory testing for the performance of desktop-computer power supplies operating at minimal loading." Memorandum, September 28, 2018.

In conclusion, we would like to reiterate our support for EPA's update of the ENERGY STAR Computers Specification. We thank EPA for the opportunity to be involved in this process.

Sincerely,

Patrick Eilert
Manager, Codes & Standards
Pacific Gas and Electric Company

Christopher Malotte
Sr. Manager, Codes and Standards
Southern California Edison



Kate Zeng
ETP/C&S/ZNE Manager
Customer Programs
San Diego Gas & Electric Company