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November 19, 2020

Ms. Abigail Daken
ENERGY STAR for HVAC
U.S. Environmental Protection Agency
Office of Air and Radiation
12000 Pennsylvania Avenue, NW
Washington, DC 20460

Subject: Final Draft Version 6.0 ENERGY STAR® Central Air Conditioner and Heat Pump (CAC/HP) Specification and the Final Draft ENERGY STAR Cold Climate Heat Pump Controls Verification Procedure (CVP).

Dear Ms. Daken:

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) Final Draft Version 6.0 ENERGY STAR CAC/HP Specification and the Final Draft ENERGY STAR Cold Climate HP CVP.

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, so as to maximize these positive effects.

The CA IOUs appreciate this opportunity to provide comments on the Final Draft Version 6.0 of the CAC/HP ENERGY STAR Specification as well as the Final Draft of the CVP. We commend EPA and the U.S. Department of Energy (DOE) for the development of the CVP which begins to address the current issues with fixed-speed testing of variable-capacity equipment and will provide a vital bridge between fixed-speed testing and a long-term endpoint of a dynamic load-based testing protocol that can reliably evaluate the representative average performance of variable capacity equipment. We also applaud EPA's enhancements to the Final Draft CAC/HP Specification, which incorporates a number of new features, such as the inclusion of climate-specific performance requirements and connected criteria, as well as the introduction of quality installation capabilities. In support of our positions, we strongly urge EPA to consider the following comments.

- 1. The CA IOUs reiterate our support of EPA's Final Draft Specification for CAC/HPs and recommend EPA consider raising the Energy Efficiency Ratio (EER/EER2) in the Version 6.0 Standard.**

We appreciate EPA's efforts in introducing a variety of new features into the Version 6.0 Final Draft of this specification. We are supportive of efforts to emphasize quality installation to ensure performance is achieved in the field, as well as EPA's development of connected criteria

requirements. However, the CA IOUs reiterate our recommendation that EPA consider a higher efficiency ratings level for moderate and hot climates. While EPA increased the seasonal energy efficiency ratio (SEER) from 15.0 in the Version 5.0 Specification to 16.0 in the Drafts of the Version 6.0 Specification across all climates, the EER remained unchanged for the moderate and hot climates. In our previous comments,¹ we suggested that EPA consider increasing EER (and EER2) performance requirements for these climates pointing out that the performance level for CAC/HPs in the moderate and hot climates should be emphasized due to the greater cooling needs of those regions. However, while the SEER has been increased, we believe that attention on the impact of EER/EER2 was missing, which has a strong impact on peak energy usage. Based on a recent analysis of over five million products within DOE’s Compliance Certification Management Systems (CCMS) database,² we found that for split system air conditioners (ACs) and HPs, the current ENERGY STAR level of 12.5 EER was below the average EER for these types of units. The following figures below show the distribution of EER for split system ACs and split system HPs with a SEER of 16.0. In both cases, a majority of units are more efficient than the proposed Final Draft EER ratings. While we recognize that the CCMS database is not representative of sales distribution, we also note that EPA’s estimate of 2018 market penetration for air source HPs and CACs is 43 percent and 29 percent, respectively.³

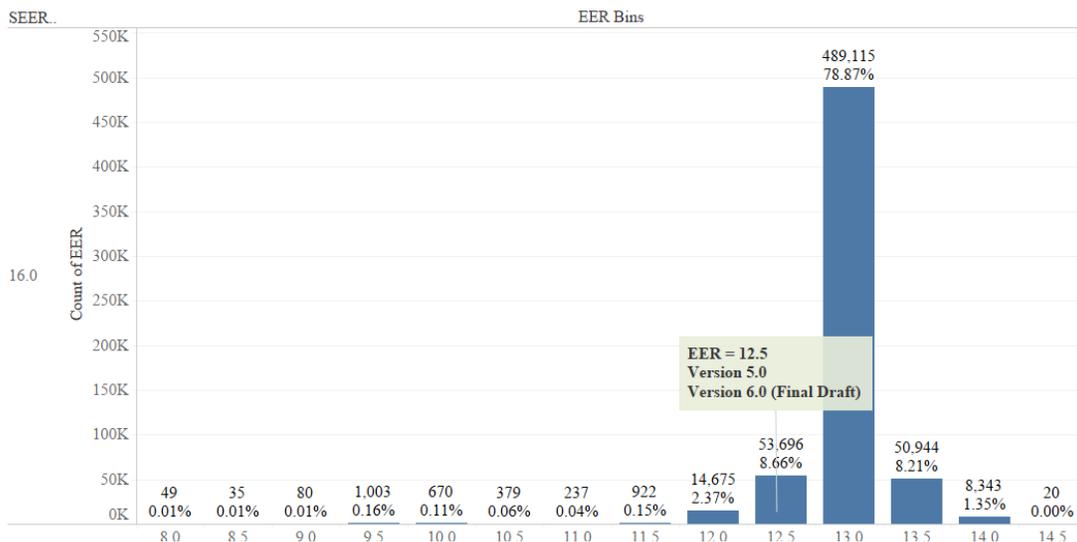


Figure 1: EER distribution for split system ACs at 16 SEER.
 Source: CA IOU analysis of the DOE CCMS database.

¹ CA IOU Comments on CAC/ASHP Version 6.0 Draft 2, p.2.

² CCMS CAC/HP Data (accessed November 11, 2020).

³ <https://www.energystar.gov/sites/default/files/asset/document/2018%20USD%20Summary%20Report%20Updated.pdf>.

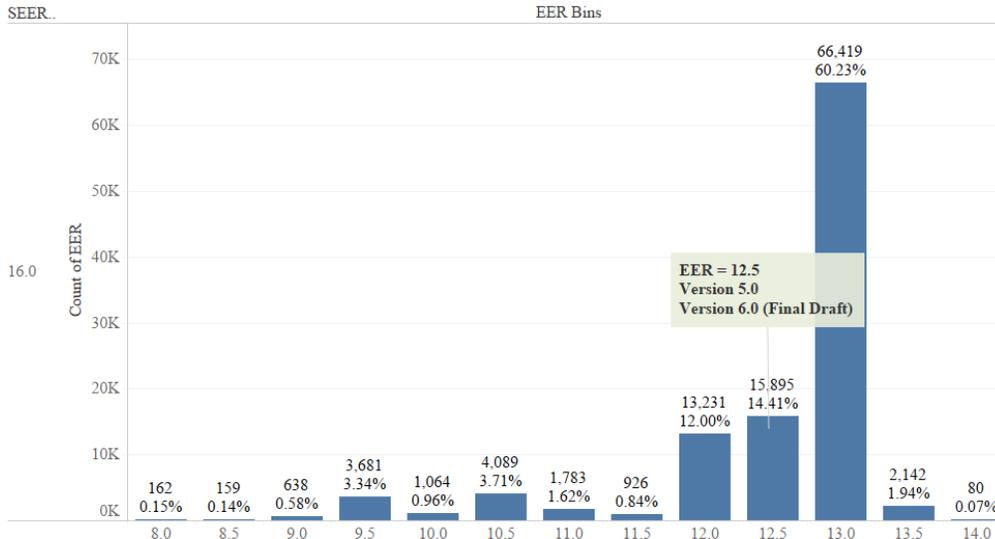


Figure 2: EER distribution for split system HPs at 16 SEER.

Source: CA IOU analysis of the DOE CCMS database.

Full load performance captured by EER has a large impact on the peak electrical usage. Similarly, peak electricity demands have had huge effects on energy procurement and energy pricing. As a result, we recommend EPA consider raising the EER/EER2 levels for CACs and split system HPs in the moderate and hot climates in the Version 6.0 Specification from the current levels of 12.5 EER/12.0 EER2 to 13.0 EER/12.5 EER2.

2. The CA IOUs support EPA’s introduction of a CVP for CAC/HP products and encourage EPA to reconsider adopting the additional test points for the procedure.

As noted in our previous comments,⁴ the CA IOUs view this CVP as an important interim step to address the gap in performance representativeness from the current fixed-speed test procedure to a future dynamic, load-based test procedure. The CA IOUs contributed heavily toward the development of the CVP that was developed under the 2019 DOE Variable Refrigerant Flow Appliance Standards and Rulemaking Federal Advisory Committee Working Group. Based on our testing experience to date, the misalignment between rated and field conditions is most significant under part-load conditions. Given this observation, we continue to encourage EPA to consider in this specification or future specifications our previous suggestions to adopt additional testing points to the CVP to provide performance assurances at other representative operating conditions, such as part-load heating (17 °F), low-load heating (47 °F), and corresponding part-load cooling conditions.

⁴ [CA IOU Comments on CAC/ASHP Version 6.0 Draft 2](#), p.2.

In conclusion, we would like to reiterate our support for the Final Draft Version 6.0 ENERGY STAR CAC/HP Specification and the Final Draft ENERGY STAR Cold Climate HP CVP. We understand the important balance EPA must manage between consumer confidence and test burden on the program participants. As such, we encourage EPA, DOE, and other industry stakeholders to consider the issues raised by the CA IOUs and other advocates throughout this process and continue to address these issues as a part of future efforts to improve DOE's M1 Test Procedure.⁵ We thank EPA for the opportunity to be involved in this process.

Sincerely,



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⁵ 10 CFR Appendix M1 to Subpart B of Part 430 - Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps.