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US Environmental Protection Agency Office of Air and Radiation
1200 Pennsylvania Avenue NW
Washington, DC 20460

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Ms. Daken,

Northeast Energy Efficiency Partnerships (NEEP) appreciates the opportunity to provide comments to the ENERGY STAR program on the Residential Air Source Heat Pump and Central Air Conditioner V6.0 Specification Discussion Guide. NEEP maintains an active ASHP initiative and have conducted several research projects as well as resources in this space. We have convened an ASHP Working Group for several years as well as maintained a qualified product list for ASHPs that performance well in cold climates (ccASHP).[1] We have reviewed the guidance and have the following specific comments and recommendations.

Rationality

We support the potential move to regionally-specific criteria. In our discussions, manufacturers have suggested that ASHP performance can be optimized either for heating or for cooling, not for both.

Variable Speed

NEEP recommends that until a test procedure or metric more capably can value the benefits of variable speed equipment, ENERGY STAR should explicitly require variable capacity. NEEP requires it as part of our ccASHP Specification.

Test Procedure

NEEP supports the general direction of the Canadian Standards Association (CSA) test procedure for ASHP which is load based. Until that test procedure is finalized and an appropriate amount of testing to the procedure has been done, we suggest EPA consider requiring low temp performance requirements in cold climates (i.e. COP@5F). This is a requirement as part of our ccASHP Specification.

[1] More details at https://neep.org/initiatives/high-efficiency-products/emerging-technologies/ashp

Comments on EER

EER continues to be an important element of peak management, but not at the expense of heating performance optimization. We recommend deprioritizing EER for colder climates. NEEP has prepared a memo that address this is more detail, with our reasoning copied below.[2]

> [NEEP's] proposed reduction of the required EER levels reflects a recognition that the specification should focus on differentiating systems optimized for heating performance and efficiency. The proposed reduction represents an intentional pivot away from requiring top-tier efficiency in all conditions, and towards a stronger focus on heating efficiency (steady state and seasonal).
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> Based on supplemental specifications we have obtained for approximately 40 multi-zone systems that meet the COP@5F requirement but fail other requirements, moving to 10 EER would allow the majority of the systems to meet the specification that otherwise meet the requirements, but are not listed due to their lower EER rating. We believe these systems demonstrate high heating performance and that they belong on a list of cold-climate ASHP products, while still maintaining adequate cooling performance.
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> ASHPs use energy during the cooling season and we want to ensure that cooling efficiencies are not completely sacrificed, so the proposal continues to include SEER and EER requirements; only the EER level is proposed to be reduced. The previous EER requirement was driven by the ENERGY STAR specification that is a uniform spec for the entire United States and does not differentiate by climate. The ENERGY STAR HSPF requirement is 8.5, 4% better than the code minimum of 8.2, yet the SEER requirement of 15 is more than 15% higher than the code minimum of 13. This may make sense for a nationwide program, but it is heavily biased towards cooling performance; such a bias does not support a spec for climates where heating loads dominate by a large margin. There is not a code minimum EER rating, and we believe that allowing more flexibility with the EER requirements better serves the goal of providing a focus on products with high performance in cold climates.

Connectivity

NEEP supports the addition of connected criteria for this specification. From our perspective, it would be reasonable for ENERGY STAR to require lower EER for products that have connected capabilities,

[2] https://neep.org/sites/default/files/Cold%20Climate%20Air%20Source%20Heat%20Pump%20Specification-%20Proposed%20Revisions%20Memo%20-%209.11%20Correction.pdf

though we would recommend gathering information to see what EER levels are being achieved by connected products to set an appropriate levels.

In general, NEEP is encouraging ENERGY STAR to incorporate and incentivize connected criteria in more specifications and amongst more products in the market. By encouraging more products to be connected, EPA could be helping better manage peak energy use on the most constrained days when a potentially dirtier, less efficient back-up generation supply may be needed for a grid to meet demand. While pollutants and carbon emissions are challenging to trace back to an individual product's energy use, we know that there are more peak days coming when energy can be at a premium; connected products offer the opportunity to help curtail some of the energy use at the most critical times. While many consumer electronics manufacturers are voluntarily adding connectivity to their suite of offerings for consumer interest, appliance and HVAC manufacturers has been much slower to embrace this trend. For those products with a potentially long shelf-life, including connectivity today gives the opportunity for control into the future.

Conclusion

Finally, we'll note that NEEP is updated our ccASHP specification (link to the memo). The comment deadline is Friday, 9/28 and we welcome EPA to comment on our proposed specification change. Thank you for offering the opportunity for NEEP to provide comment to the ASAHP/CAC V6.0 guidance documents. ENERGY STAR is and must continue to serve in a leading role in recognition of high performing products, and NEEP looks forward to continuing to support ENERGY STAR's efforts into the future. Please don't hesitate to contact us with any follow up questions or clarifications.

Sincerely,

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