

September 21, 2018

Abigail Daken
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

RE: ENERGY STAR Residential Air Source Heat Pump and Central Air Conditioner Equipment Version 6.0 Discussion Guide

Dear Ms. Daken,

Enclosed are the comments of the Natural Resources Defense Council (NRDC) regarding the discussion guide for version 6.0 of the Energy Star specification for Residential Air Source Heat Pumps and Central Air Conditioners. We are grateful for the opportunity to discuss this important issue.

Variable Capacity

We believe that variable capacity may offer substantial benefits, but the current DOE test procedures do not fully capture the benefits of variable capacity equipment due to the lack of a dynamic, load-based test. Tests do not allow the units to vary their capacity as they would in the field, and, relatedly, they do not capture the effect of a given manufacturer's control software, which we believe can have a great impact on real world performance and efficiency.

In the long term, EPA should pursue a load-based, dynamic test, such as the one being developed by the Canadian Standards Association (CSA), coupled with strong efficiency requirements. We recognize that this is not an immediate solution to the question of whether EPA should temporarily expressly require variable capacity to achieve an Energy Star rating. NRDC does not express an opinion on that option in particular but believes that any path forward should be backed by strong evidence demonstrating net environmental benefits.

Regionally-Specific Performance Requirements

In the discussion guide, EPA asked whether regional standards mirroring the regions for the Department of Energy's minimum air-source heat pump and central air conditioner efficiency standards would be appropriate for Energy Star. We supported the adoption of those regional standards by DOE, and we similarly encourage their adoption here.

With respect to EPA's specific feedback requests in this section, NRDC understands that some efficiency programs outside of the Southwest do use the Energy Efficiency Ratio (EER) as an incentive program requirement.¹ However, high EER ratings may not be equally important in all parts of the country. In particular, NRDC has heard that there is a perception among some manufacturers that in many cases, there is a trade-off between obtaining high EER ratings and high Seasonal EERs (SEER). While EER may be critical for equipment in the Southwest that will spend a greater percentage of time at peak operating conditions, SEER may be more useful in other portions of the country. Consequently, we

¹ E.g., http://www.njcleanenergy.com/residential/programs/cooladvantage/heat-pumps#COOLAdvantage_rebate_table

support region-specific requirements that can best capture what is most important to the region from an overall efficiency perspective.

Optional Connected/Grid-aware Criteria

NRDC appreciates EPA's questions regarding demand response (DR), a technology with the potential to reduce customer costs and environmental impacts as a technology. However, we encourage EPA to consider this question more broadly. DR typically implies curtailment during exceptional circumstances only, not load management on a day-to-day basis. More frequent management, often referred to as demand flexibility (DF) or load management (LM), should be investigated as well. These technologies may provide substantial benefits, such as the possibility of shifting electricity consumption from on-peak to off-peak times.

That said, we believe that any trade-off between EER or SEER and DF or LM capabilities needs to be rigorously proven to deliver benefits, from both customer cost and environmental perspectives, that outweigh the lower efficiency requirement. Manufacturers and other interested parties should provide data as part of an ongoing conversation about these capabilities.

Regarding AHRI 1380 as the basis for any such criteria, as of the deadline for comments AHRI 1380 is still in draft form and has not been made available for public comment. Therefore, we believe that EPA should delay any decision and instead facilitate discussion surrounding this issue once all interested parties are able to publicly review the standard.

Thank you for considering these comments.

Sincerely,



Joseph Vukovich
Energy Efficiency Advocate
Natural Resources Defense Council